

Commerce

# SOUTHERN TEXTILE BULLETIN

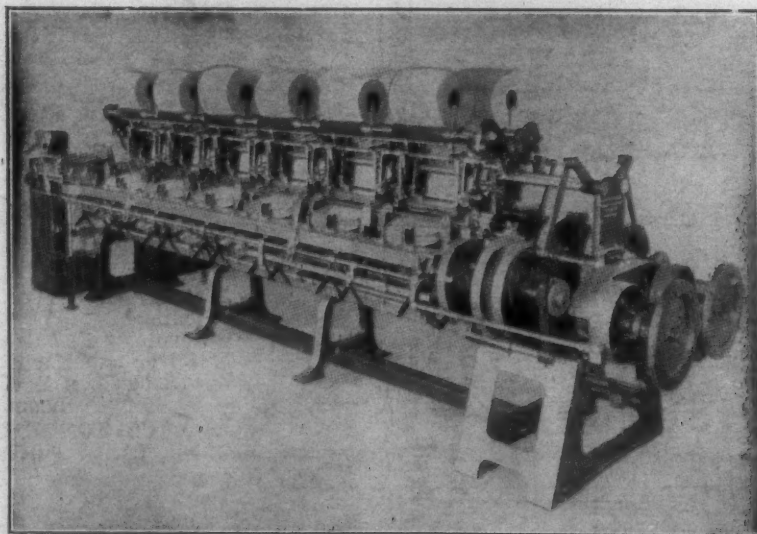
VOLUME 25

CHARLOTTE, N. C., THURSDAY, FEBRUARY 14, 1924

NUMBER 25

**JOHN HETHERINGTON & SONS**  
**LIMITED.**  
**Manchester, England**  
Established 1830  
Makers of All Kinds of Machinery for  
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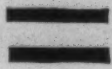
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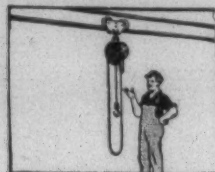




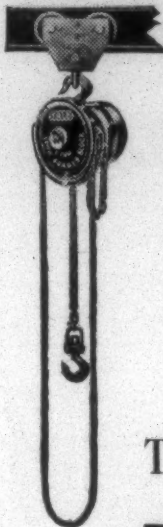
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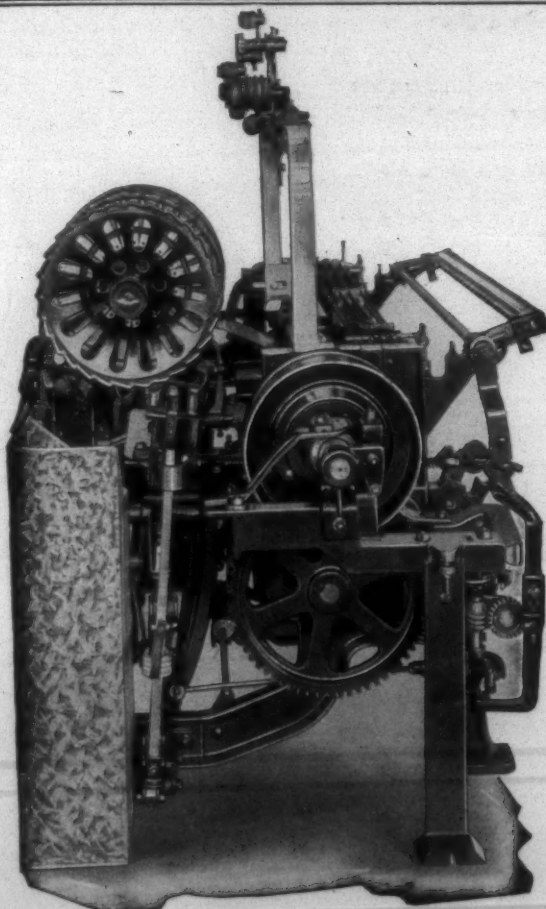
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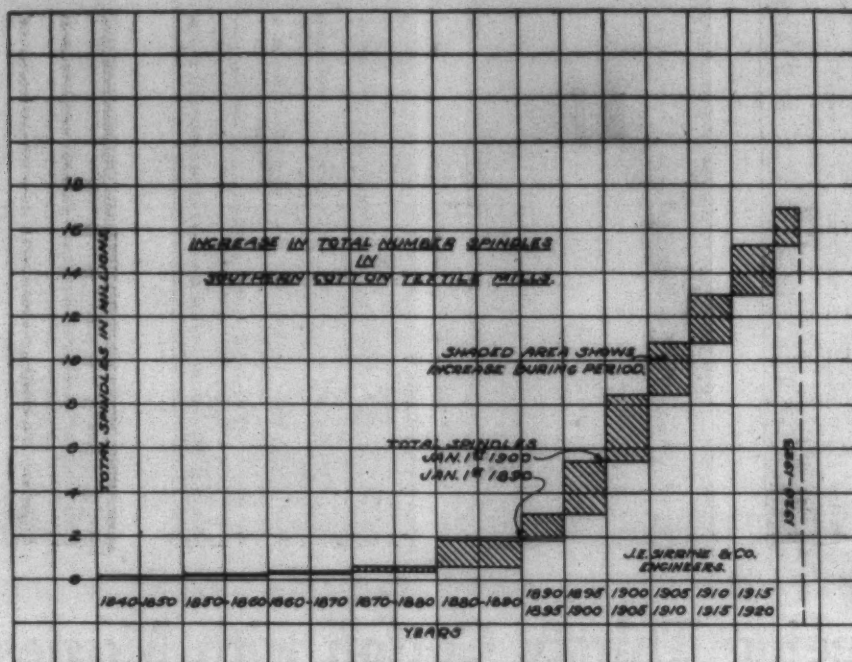
Cone Roving Frames	Ring Twisters
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## The South's Growth has been Our Growth

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In 1880 the South used 12% of cotton consumed by American mills, in 1922 it used 63%.

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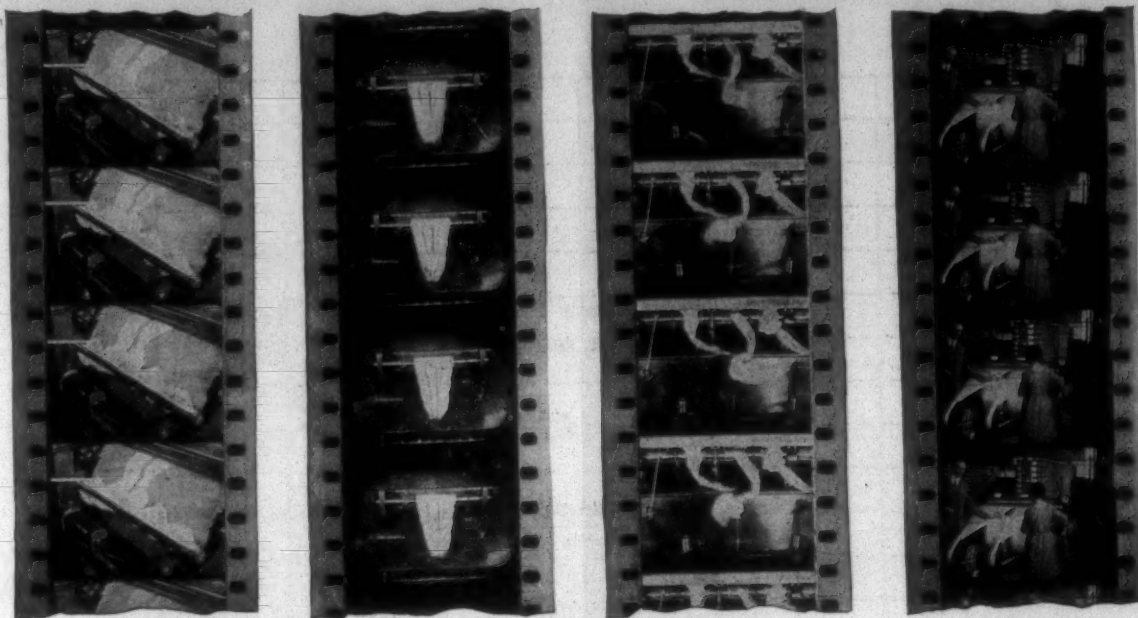
Greenville

South Carolina

THE FUNCTIONS OF THE ENGINEER







## Seeing Thirsty Cotton with Movies

We've been telling you for some time of the loss from allowing your cotton to become thirsty.

All the manufacturing operations in a cotton mill tend to make it thirstier as it goes through until at the time of shipment its thirst may cost you as much as \$5.00 a bale. Figures and charts are a cold medium of expression and we have long wished to be able to show in pictures just how and when these losses occur.

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This film is entirely different from the usual industrial film. The pictures are taken close-up and by the ingenious slowing down process combined with magnification one can see the operation and behavior of the fibre during the different processes and just what effect moisture has.

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*Subject to previous schedule, arrangements may be made to show the film in your locality. Write us.*



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Hyatt Bearings 4.37 HP

Saving per frame .54 HP

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Plain Bearings 5.46 HP

Hyatt Bearings 5.00 HP

Saving per frame .46 HP

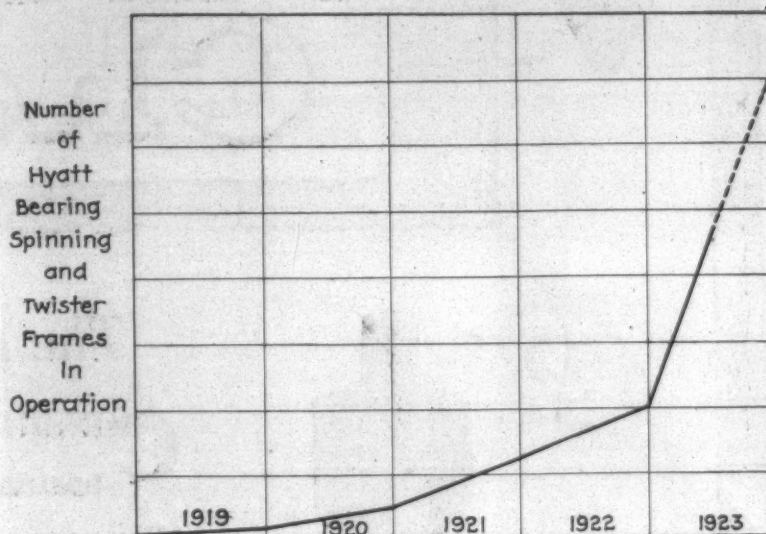
### Spinning Frame Test Mill No. 3

Plain Bearings 4.37 HP

Hyatt Bearings 3.84 HP

Saving per frame .53 HP

The above tests, run in mills under actual operating conditions, show that an average power saving of .51 HP per frame was effected by replacing ordinary bearings with Hyatt roller bearings.



Hyatt roller bearings not only reduce friction and save power but they also reduce maintenance costs. The bearings need only to be oiled three or four times a year, effecting a saving of 80% in lubrication costs. They cannot get out of order and will last throughout the life of the spinning frames without adjustment or replacement.

These are some of the reasons why successful mill operators who are ever on the alert for ways and means for reducing operating costs are specifying Hyatt bearings for their new spinning and twister frames and having Hyatt replacement boxes applied to their present frames.

## Hyatt Roller Bearing Company

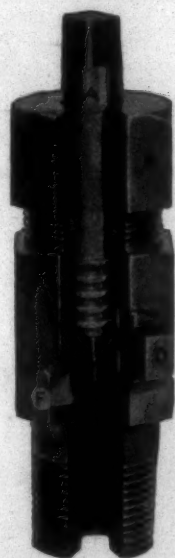
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Liquid Chlorine-Caustic Soda*



*Sesquicarbonate of Soda  
Bleaching Powder-Soda Ash*



# SOUTHERN TEXTILE BULLETIN

PUBLISHED EVERY THURSDAY BY CLARK PUBLISHING COMPANY, 39-41 S. CHURCH STREET, CHARLOTTE, N. C. SUBSCRIPTION \$2.00 PER YEAR IN ADVANCE. ENTERED AS SECOND CLASS MAIL MATTER MARCH 2, 1911, AT POSTOFFICE, CHARLOTTE, N. C., UNDER ACT OF CONGRESS, MAR. 3, 1879.

VOLUME 25

CHARLOTTE, N. C., THURSDAY, FEBRUARY 14, 1924

NUMBER 25

## *Causes of the Cotton Crop Failure*

THREE successive American cotton crops averaging distinctly less than 10,000,000 bales each have brought the textile industry of the world face to face with impending famine in cotton supply. The situation, indeed, from a supply standpoint, is perhaps without previous parallel in the history of the industry unless one goes back to the period immediately following the war between the States, according to George W. Foshee in the Boston Transcript.

A serious effort is in progress—has been in progress for some time—to find a price level that will curtail consumption to a point where the quantity available will go around, pending the growth of another crop. There has been such rapid exhaustion of the surplus brought over from other years that the textile industry is largely dependent on current production. This is true not only of American but also of all growths. It is quite apparent even now, that the carry-over at the end of the 1923-24 season will be extremely small, perhaps the smallest witnessed in the past three or four decades, and the question of potential production, particularly in the South, is the most vital one confronting the cotton industry of the world, because on the answer thereto hangs the fate of those dependent on what is grown or can be grown in the Southern States.

An analysis of what happened during the growing period of 1923 discloses quite clearly that the outlook for cotton production is not so gloomy as appears on the surface. It also discloses that it is neither necessary nor safe to conclude that there will never be another season of at least fair yield per acre or as a whole.

This view is based, primarily, on the broad incontrovertible fact that the partial failure experienced during 1923 is directly traceable to the abnormal rainfall in most of the Southern States—rainfall unprecedented in the wideness of the area affected and in the duration thereof.

It is true that boll weevil and army worms exacted heavy toll during the latter half of the growing period, but it must be admitted that the activities of these pests were greatly stimulated by the abnormally heavy and abnormally frequent rainfall between May 1 and September 15, 1923. This precipitation delayed preparation of the seed bed, kept planting in check, necessi-

lated frequent replanting, interfered seriously with cultivation, and resulted in the latest start a crop has ever received. Furthermore, it brought about a rankness of plant growth wholly inconsistent with normal fruiting and perfectly ideal, in the tenderness of the foliage, for operations of weevil and army worms. It therefore seems clear that excessive rainfall was the primary cause of the huge decrease in production and that these pests were a purely secondary cause.

The law of averages is the only safe law to follow and it seems both reasonable and logical to assume that, given less frequent and less widespread rainfall, chances for increased production will be materially enhanced. Nature is perhaps the greatest "evener" with which human experience has to deal and it may be counted upon to do the needful in respect to distribution of rainfall, both as to extent and duration, as well as in respect to other weather phenomena.

Cotton is essentially a dry weather plant. It was such long before the advent of weevil. Even before these pests spread over Texas in the early "nineties," it was well-nigh impossible to produce large crops during seasons in which rainfall predominated and in which sunshine was deficient. This finds striking reflection in the fact that, in all dry seasons, the crop has been decidedly under-estimated, while, in all wet or rainy seasons, it has been just as heavily over-estimated. But it is more essentially a dry weather plant today than ever before because practically the entire growing area in the South is infested with weevil and because it is scientifically established that weevil are infinitely more harmful in seasons of excessive precipitation than in those of approximately normal rainfall. A cursory examination of the records of the United States Department of Agriculture will bear out the latter statement so forcibly as to place it beyond the realm of argument. It necessarily follows, conversely, that, in seasons of modest rainfall and abundant sunshine, weevil damage has been comparatively small and yields have been reasonably full.

The broad proposition that abnormal rainfall, rather than weevil and form activities, was the biggest factor in curtailing yield during the growing period of 1923 is so obvious

that it scarcely needs to be demonstrated.

Final figures on yield for 1923-24 will not be available until around March 20, 1924, when the Census Bureau will disclose the quantity ginned from the growth of 1923. It is therefore impossible to draw as mathematically correct conclusions as may be desired. But sufficient progress with ginning has already been made to justify the statement that the crop is tragically near failure in all major producing States with the exceptions of Texas, on the extreme west, and the Carolinas, and particularly North Carolina, on the extreme east.

The question naturally arises: What happened in Oklahoma, Arkansas, Tennessee, Mississippi, Louisiana, Alabama and Georgia—all with the exception of Oklahoma lying between these two extremes—to cause such disaster to the crop therein, when Texas and North Carolina came reasonably close to the record in total yield for all times?

Texas and the Carolinas, according to the Bureau of Entomology, United States Department of Agriculture, are just as heavily infested with weevil as any other States in the cotton-producing area. This being true, why were these pests so harmless in these States as compared with all the remaining ones?

The answer is found in the vast difference in weather conditions, with particular reference to rainfall, as between the two groups of States. The whole story of large production in one group and almost complete failure in the other lies right here and it is so plain that "he who runs may read."

There were frequent rains during the growing season in Texas, as well as in the Carolinas, but a careful analysis of the rainfall reports, compiled day by day for every Government reporting station in the belt, discloses that the real rainfall storm area extended from the eastern boundary of Oklahoma, on the west, to the Savannah river, on the east. The States on the fringe of producing territory, with the exception of Oklahoma, were in the rainfall path from time to time, but the big cotton producing States in the vast area lying between the two received the greatest amount of rainfall, as well as the most frequent precipitation, in the history of the South. The former have produced, as already indicated, almost record crops, while the latter have come nearer failure,

as a whole, than ever previously experienced. The results speak for themselves.

But this isn't all. The area of heaviest and most continuous rainfall was in northern Florida and the southern half of Georgia, and, while the exact figures are not yet available, it may be stated, that the smallest yield per acre for any portion of the belt will be found in these self-same sections. The crop in Florida is almost the smallest ever produced while that in southern Georgia is so near failure it may be properly termed as such. This, of itself, is almost sufficient to be conclusive.

But there is Missouri. It is one State that is practically free from boll weevil infestation. And yet the crop therein is no larger this year than last, despite an increase of nearly 100 per cent in acreage. What caused this drop of more than 50 per cent in yield per acre? Is the virtual absence of weevil, the only answer is, "rain." The spring was cold and backward. Difficulties were encountered in preparing the soil, in planting, in securing stands, and in cultivation, largely because of excessive rainfall. The latter subsequently led to abnormal plant growth and this, in turn, attracted the heaviest attack from army worms ever previously known. These pests stripped the rank foliage from the plants, including the shuck on the bolls in all stages of development, and thus put an end, effectually, to maturity of any but the earliest fruitage. These are millions of immature bolls, of almost every conceivable size, that have never opened and that never will open because loss of foliage on the plants deprived the latter of vitality by cutting off their breathing facilities. Rains were therefore the primary cause of the tremendous upset in Missouri and army worms were the secondary cause. Weevil did not figure therein at all. Oklahoma is another case in point. It ran the gamut of both excessive rainfall and its opposite, drouth. The latter was characterized by such extremes of heat for a number of days that official reports indicated the mercury somewhere between 100 and 112 degrees for nearly all Government reporting stations therein. But any grower of cotton in Oklahoma will tell you, without equivocation, that the foundation for the practical failure of the crop therein lay in the abnor-



mally heavy rains during all of May and the greater portion of June and that the finishing touches were put on in the form of similar rains all over the State during the latter part of August and the major portion of September. There were strikingly few complaints of either weevil or worm activity. It was necessary to plant two to four times, in many instances, to secure stands and the rainfall was so continuous during May and most of June that cultivation was seriously delayed. Oklahoma really enjoyed cotton making weather for only a brief period—that lying between the cessation of the earlier heavy rains and the beginning of the drouth in August—and it would not have produced a good yield under such conditions even if there had not been a single weevil or a single worm in its entire confines. With one of the latest crops of record in point of plant development, it ginned more cotton to September 1 than in any recent year, which forces the inevitable conclusion that the drouth added its quota of damage to that done by the earlier rains. And then, in late August and September, the State was fairly deluged with rainfall which brought about delayed opening and serious rotting of practically full-grown bolls. The conclusion is inescapable that Oklahoma was a victim during the 1923 growing season of unfavorable weather rather than of either army worms or weevil. There were very few complaints of either. It was just another case of excessive rains, with the added handicap of a drouth spliced in be-

tween. The rains were just about as much overdone as the "histing" Josh Billings asked of his neighbor's cow which he was milking by the light of the moon. She "histed" all right but she "overdid it" to such extent that he and the pail both disappeared from the scene.

It is not intended to convey the idea that weevil do not constitute one of the most serious obstacles confronting growers of cotton in the South. The tremendous efforts of Government, State, county and community authorities, experiment stations, agricultural colleges, farm bureaus and other agencies to combat these pests are evidence enough that they represent the greatest problems with which planters and all others identified with the growth, distribution and consumption of the cotton crop of the Southern States have to deal.

The man thought to which attention is drawn is that sufficient progress has been made in devising means of boll weevil control to make it possible to produce a reasonably large yield if anything approaching normal weather conditions is experienced over the greater portion of the growing area.

Such weather is the sine qua non. The experience of 1923, as already outlined, discloses the utter impossibility of producing a reasonable yield under abnormally heavy and abnormally frequent rainfall.

Such rainfall, covering nearly all of the period from planting time to harvest, brings a train of difficulties which cannot be successfully met. It

defeats the efforts to get the crop away to an early start. It likewise defeats intensive cultivation. It also defeats successful use of calcium arsenate and other poison mixtures which are easily washed off the plants with every shower. It brings army worms in almost incalculable numbers. The latter never come except in wet seasons. They must have a tender plant on which to work, and a tender plant and a dry season are just about as unthinkable as that the lamb and the lion shall lie down together. Army worms, too, it may be noted, intensify the work of the weevil. They did during 1923. The latter were late in appearing. For a time, throughout the central valley States, Alabama and Georgia, they attacked squares as rapidly as they appeared. But later, after army worms had stripped the foliage from the plants and the latter quit putting on new forms, weevil did something they had never been known to do before. They attacked bolls in every stage of development, including those fully grown. In some instances they "stung" only one compartment. In others they attacked two, three, or four, and, in some, as many as five, or all. This attack on fully or nearly fully developed fruitage which was the direct result of the absence of anything else on which to feed proved one of the big factors in cutting down yield in the central area. It was impossible for planting interests who had worked the same land for years to come within even hailing distance of a correct estimate of what they were going to

make, because it was impracticable to determine, without cutting the grown bolls open with a knife or other instrument, how many were infected in part or in whole.

But the abnormally heavy rainfall was the primary cause of the heavy decrease in yield because it paved the way for army worms and for boll weevil, which quite naturally took full advantage of the situation rendered so perfectly ideal for them.

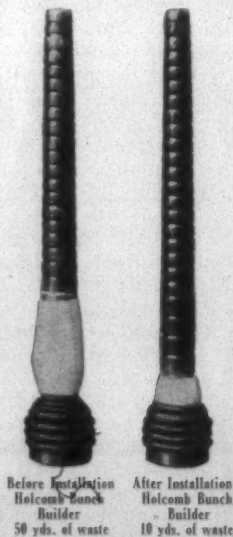
There will probably never be another season where so large a percentage of the cotton producing area will be subject to such unfavorable weather as during 1923. Only Texas and the Carolinas escaped. There have been seasons when limited areas have been fairly deluged as witness Alabama in 1917-18 and Oklahoma in 1921-22. But there has never been a previous season when an area comprising practically half of the acreage seeded to cotton has been subjected to such excess or to such frequency of rainfall. On the law of averages, there should not soon be such a season again.

The weather during 1924 will be the determining factor in the yield equation. It stands to reason that, with the almost fabulous prices now prevailing, every foot of ground that can be prepared for cotton will be seeded thereto. It is therefore largely a matter of yield per acre and this will depend, to a decided degree, on the character of weather during the late spring and early summer. If conditions are favorable for proper land preparation, for

(Continued on Page 33)

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*A bright developed brown particularly suitable  
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*A highly concentrated, direct blue, of  
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This dyestuff can be used on all types of dyeing machines, due to its excellent penetration, level dyeing qualities and a complete, uniform exhaustion. Pontamine Blue GH Conc. can be applied at the boil on union goods, the vegetable fibres being more heavily dyed than the animal fibres. Cotton can be dyed readily in a cold bath, making this dyestuff useful in speck dyeing.

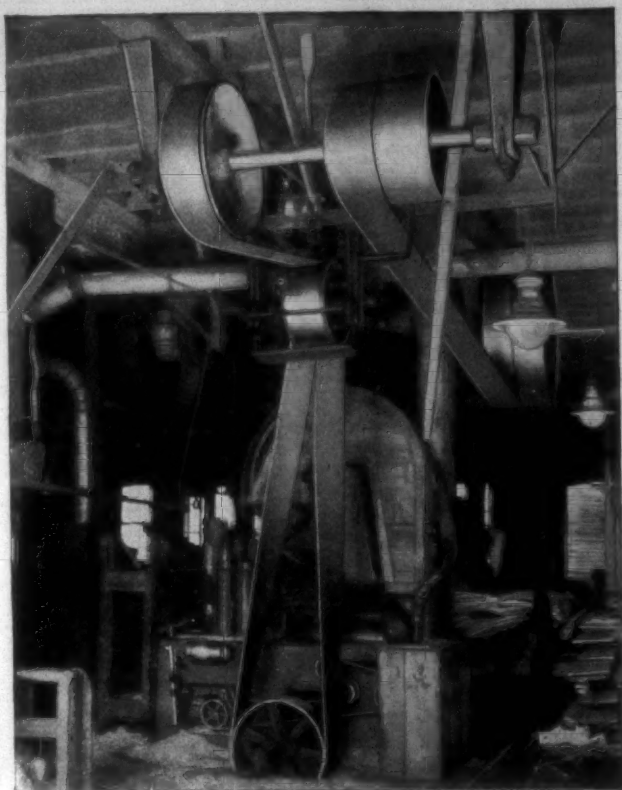
**E. I. DU PONT DE NEMOURS & CO., Inc.**

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Wilmington, Delaware

**STANDARD-UNIFORM**





**"The finest piece of leather  
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of business life"**

**T**HIS was the remark of the superintendent of a large factory. And a very fine tribute to that particular Graton & Knight Belt we considered it.

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Send for the book "The Standardization of Belting." At the same time let us know what type of power transmission you are most interested in.

**GRATON & KNIGHT**  
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*Nothing takes the place of Leather*

## Cotton Yarn and Cloth Sizing

**T**HE first step in research work should be a compilation of the knowledge of the subject that has been acquired in the past. This is what the Research Association for the Cotton Industry has done in connection with the sizing of cotton goods, giving the results in a report prepared by F. D. Farrow, which manufacturers will find very useful, as it gives in compact form a summary of the published discussion of the sizing of yarn and cloth.

### Facilitate Weaving.

Primarily intended to facilitate weaving, sizing now includes among its aims the addition of cheap weighting materials to the cloth. This change may be said to coincide with the granting of a patent in 1854 for the use of magnesium chloride in size, and with the award in 1858 of a patent for the inclusion of china clay. The opinion is commonly expressed that the object of sizing is to strengthen the yarn, and, with this end in view, most writers say that the size should penetrate the yarn as deeply as possible. This is contradicted by Moore, whose conception of an ideally-sized warp is that of a thread encased in a thin tube of frictionless rubber. Pickard, on the other hand, attributes breakages in the loom to the loss of "elasticity," which he regards as a more important property of the yarn than pliability. He also raises the question, as yet unanswered, of the extent to which penetration of the yarn occurs.

The order of merit assigned by Moore to common adhesive is glue, dextrin, starch. The first two are too brittle when dry, and on account of its superior flexibility, some form of starch is in universal use for cotton warp sizing. Wheat flour is largely used. It gives a mellow feel to the cloth, and is capable of adding as much as 40 per cent to the weight of the yarn without the use of mineral matter or the loss of weaving qualities, provided the flour has been fermented or steeped with antiseptics for several weeks. Potato starch is recommended for all weights of size. It is considered to impart smoothness and pliability to fabrics of light reed and pick, to add greater weight than any other starch, to be whiter, much stronger and capable of holding more china clay per pound than wheat flour, and to be of good sizing quality even when made from frosted or decayed potatoes. Beams sized with farina tend to soften on storage, while the pastes become watery if overboiled or kept too long.

Maize starch should be thoroughly cooked in order to prevent the size being rubbed off in the loom, but if well-prepared it gives a firm feel to the cloth. It is said to be more uniform and of higher sizing value than other starches, while graded products of a high range of utility are rendered available by modern methods of preparation. Though too harsh for heavy sizing, it is valuable for this purpose when mixed with wheat flour. Its liability to mildew can be decreased by long boiling.

Sago is another starch which requires to be well boiled. It has great

strengthening power, and is generally employed for heavy-picked goods of fine count. Hadfield states that sago paste loses viscosity overnight, but Smith denies that it "goes back" on standing. Rice starch, tapioca and wheat starch are used for special work. "Soluble starch" possesses the advantage of dissolving readily in warm water, giving a clear solution of low viscosity, and is useful in reducing the consumption of soap and fat. It is considered that dextrin is a better adhesive than starch, and, though too stiff or too sticky when used alone, is useful in small quantities for correcting the loss of adhesiveness which starch suffers in the presence of fat or for laying surface hairs. Gum tragacanth, a carbohydrate derived from the cotyledons of the carob bean, is a powerful adhesive, resistant to mildew, and is frequently used for special work.

Successful sizing has been done without the use of any fat, but the amount encountered in goods for bleaching has been known to be as much as 36 per cent of the weight of starch. Fat is said to lubricate the healds and reeds, or to increase the flexibility of the starch film. Smith distinguishes between the softening property of saponifiable fat and the lubricating properties of wax. He also states that excess of fat diminishes the adhesiveness of the starch film, while Moore believes that this is true for any quantity of fat. Cronkhite is of the opinion that to add fat to a sizing mixture has the effect of waterproofing the starch, thus preventing its acquiring proper flexibility in the humid atmosphere of the weaving shed.

It is generally agreed that any saponifiable fat may be used with safety, but warning is given against the presence of excessive acidity in tallow, 5 per cent or more of free fatty acid or the adulteration with unsaponifiable material such as paraffin wax. With regard to the latter substance, there is almost complete unanimity that it is unnecessary, and should be rigidly excluded from any goods which are to be bleached or dyed. Fort, however, considers the extraction with an organic solvent should be included as a normal part of the bleaching process, when paraffin wax would be a legitimate ingredient of size. Its application for producing a polish on the yarn is said to be unnecessary in view of the fact that the saponifiable Japan "wax" and spermaceti, though more expensive, are available for this purpose and are unobjectionable in any size.

Soap is frequently included as a softener for size mixtures. Pickard considers it to be useful in connection with cylinder drying, and presumes that experience must have shown it to be beneficial, even when used with magnesium or zinc chlorides which "cut" the soap, as it is frequently employed in mixtures containing these salts.


Glycerol is a softener which meets with approval on account of its ready solubility in water, its hygroscopic properties and the absence of raised spots to 120 degrees F., keep-

(Continued on Page 34)



**Automatic Spoolers**  
**High Speed Warpers**  
**Ball Warpers**  
**Twister Creels**

*"Every Knot a Weaver's Knot"*



**Barber-Colman  
Company**  
Rockford — Illinois  
Boston, Mass. Greenville, S.C.

*Our system cuts your spooling and warping costs in two: produces better warps:  
increases your weave room production.  
Send for the book*



# Visiting the Textile Machinery Shops

By David Clark, Editor

(Continued from last week)

**L**EAVING Boston on an early train Thursday, January 17, I reached Pawtucket about 9 o'clock and drove to the H. & B. American Machine Company.

## H. & B. American Machine Co.

I had written the treasurer, E. R. Richardson, that I would make the visit but he had left for the South before my letter reached him.

I, however, found E. L. Martin, the secretary, and his nephew, J. C. Martin, of the sales organization, and enjoyed a talk with them.

E. L. Martin worked for about two years in the Standard Cotton Mills at Cedartown, Ga., and is therefore familiar with Southern conditions. He told of a visit, while in England about two years ago, to Mr. Parker, the former superintendent of the Standard Cotton Mills. After many years in this country Mr. Parker returned to England and died in the house in which he was born.

Mr. Martin assigned W. J. Fleming to conduct me through the shops. Mr. Fleming formerly erected their machinery in the South, but is now assistant superintendent of the shops.

About twenty-five years ago, I was a H. & B. American Machine Company erector, or to be more exact, I was a helper to two of their erectors, Fred Dickinson and Al White. Fred Dickinson is now in charge of their Southern erection but I do not know what became of Al White.

The H. & B. American Machine Company build opening machinery, lappers, cards, drawing frames, roving machinery, spinning frames and twisters. They have a capacity of about 80 cards per month.

Mr. Fleming first showed me the

opening machinery and lapper department, where they had a number of machines in course of erection. They take much pride in their lappers and continually working on improvements.

Of much interest to those who are studying opening machinery are the cleaning trunks built in sections. Instead of the ordinary trunk through which cotton is blown from opening room to lapper room, a trunk can be inserted with one or several of these H. & B. sections and much dirt and trash taken out of the cotton as it passes through.

All through their plant are automatic machines and evidences of efficiency of production.

They use some methods that differ from the other shops. For instance, they mould their card cylinders by inserting the cores into large circular iron boxes called cheeks. They claim that it insures a more accurate and uniform casting.

In making spinning rings a hole is punched into the end of a red hot bar, the end cut off and the part placed with the holes over a pin and the outside touching a roller. These are revolved at a very high rate of speed and the ring is rolled out to the desired size blank.

They make their own licker-in wire and their card top flat chains.

It was interesting to watch them make bolsters with a revolving machine that passed the bolsters into position for a series of drills.

They have a well equipped foundry with many machine drawn moulds and it was very interesting to watch the polishing of castings as

they use the English system.

Six large imported grindstones about six feet in diameter and one foot thick are arranged in a row. One end of a board about eight inches wide is fastened by a rope to the ceiling and the other end of the board touches the grindstone.

The men place the castings on the grindstone with the loose end of the board resting on it and they sit on or ride the boards. The men vary the grinding contact by varying their pressure on the riding board. Their system certainly does give a good polish.

The H. & B. American Machine Company prepare their card arches by fastening two together to form a circle and cutting them on a revolving planer so that both arches will be exactly the same.

They made their spindle blades by reducing them to size with a Rider steam hammer which sounds like a woodpecker when it is working.

They have in one room very large machines for handling the large parts such as card sides and spinning and twister rails.

In one of them they were milling to size in one operation four spindle rails.

While the H. & B. American Machine Shops were not quite as large as one or two of the others I had visited, they cover a very large area. Everywhere the rooms and machines are kept exceedingly clean and it was evident that the shops are operated upon a very efficient system.

Returned to the office, J. C. Martin very kindly drove me to the Manville-Jenckes Company, where I

hoped to find my friend, F. C. Hall, the agent.

After Mr. Martin had left me I found that Mr. Hall was on a trip to the Loray Mills at Gastonia, N. C., so I took a street car which carried me to the Providence Biltmore Hotel at Providence, R. I.

## Henry L. Scott & Co.

After lunch I took a taxi to the plant of Henry L. Scott & Co., at 101 Blackstone street, Providence.

The Henry L. Scott & Co. are exclusively manufacturers of testing machines and are the leaders in their line in this country.

About 23 years ago Henry L. Scott found himself, through an unfortunate loan, in possession of a small machine shop and in seeking business he made some testing machines for a customer.

He conceived the idea of making more efficient machines and because he built good ones has built up a very large business.

His brother, E. C. Scott, joined him a number of years ago and together they have developed a highly specialized industry.

They have a well lighted and well arranged three-story building and everywhere it was clean and neat.

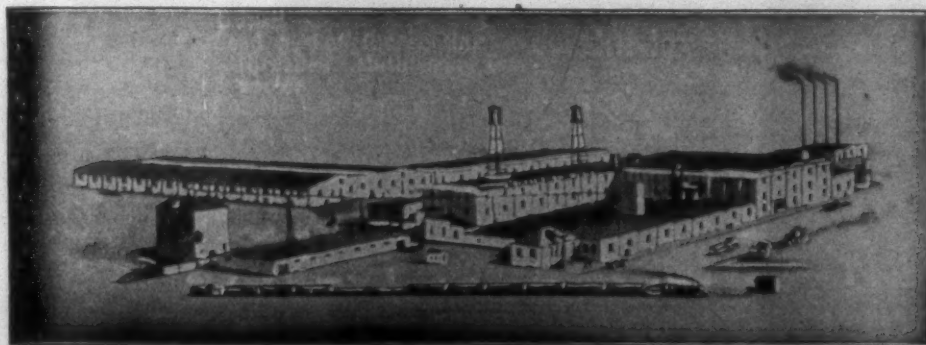
The superintendent, J. A. Valentine, showed me over the shops and took much interest in explaining the development of the testing machine.

Originally they built a machine that broke by hand a small skein of yarn, then there was a call for a machine to test cloth and they added the clamps. Then there was a demand for a power tester and they added a small motor to take the place of the hand wheel.

Then there came a demand for

(Continued on Page 32)

## VICTOR MILL STARCH – The Weaver's Friend



It boils thin, penetrates the warps and carries the weight into cloth. It means good running work, satisfied help and one hundred per cent production.

We are in a position now to offer prompt shipments.

## THE KEEVER STARCH COMPANY

COLUMBUS, OHIO

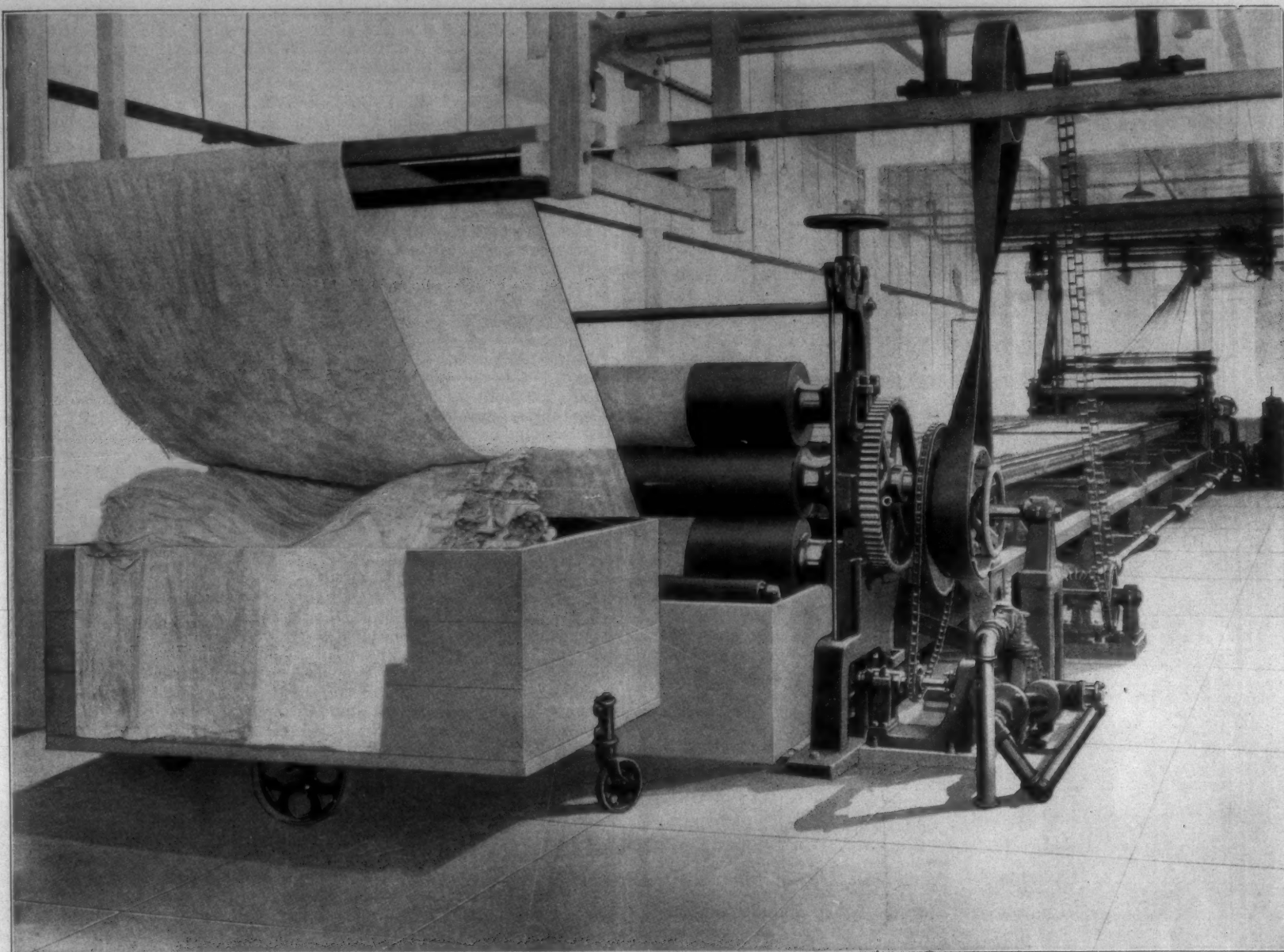
DANIEL H. WALLACE, Southern Agent, Greenville, S. C.

C. B. ILER, Greenville, S. C.

O. F. BURGESS, Charlotte, N. C.



Padding Machine, Special Heavy Mercerizing Tender and Two-Compartment Washing Machine



*Mercerizing makes fabric and yarn  
take dye much more readily*

This means uniform dyeing throughout. Then consider another advantage of mercerizing—the added strength that either yarn or fabric acquires during the mercerizing process. This increased strength gives the consumer more wear from garments made of mercerized fabric. Here, incidentally through mercerizing, is a good chance to increase your consumer goodwill: Mercerize your product and see that the

word “mercerized” is made part of your label. You know

*Goods that wear long  
are asked for again.*

We have a booklet on mercerizing. We'll send it and at the same time we offer our services in determining whether or not it would be to your advantage to mercerize your product.

**H. W. BUTTERWORTH & SONS CO.**

*Established 1820*

PHILADELPHIA, PA.

*Providence Office*

Turks Head Building

*Canadian Representative*

W. J. Westaway Co.

Hamilton, Ontario, Can.

*Greenville, S. C. Office*

Woodside Bldg.

**BUTTERWORTH *Finishing* MACHINERY**



## SERVICE of Special Value to the Textile Industry

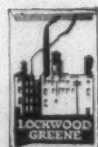
The textile industry has seen many changes in the past half-century. Methods have been revolutionized, new processes and machinery substituted for old.

Yet in the face of these changes, there are textile mills in New England, in the South and in the Middle West that have kept pace. They are today as up-to-date as the day they were originally designed. With the help of intelligent and constant engineering service they have made the changes with a minimum of delay and expense, for these mills were **Built with Foresight.**

Lockwood, Greene & Co., through ninety-two years of varied ever-progressive experience in industrial engineering, have been in especially close association with the textile industry. Through their service they have had a share in the very improvements that have marked its growth. Their organization of engineers, architects, financial men and mill managers have had a part in the up-building of the industry.

Lockwood, Greene & Co. are especially prepared to meet any problem of mill construction or textile manufacturing. Their service is complete, including the valuation of properties for financial purposes, for inventory or taxation.

A copy of "Building with Foresight," a booklet descriptive of Lockwood-Greene achievements, will be sent on request.



BUILDING  
WITH  
FORESIGHT

## LOCKWOOD, GREENE & CO. ENGINEERS

EXECUTIVE OFFICES, 24 Federal Street, BOSTON

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DETROIT	CLEVELAND	CHARLOTTE	SPARTANBURG

Lockwood, Greene & Co. of Canada, Limited, Montreal  
Compagnie Lockwood Greene, Paris, France

## Review of European Textile Situation

At the end of 1923 the price of the whole. The finances of many of the mills spinning American cotton having gone from bad to worse, the improvement in the last few weeks has come as a most welcome relief, but there is some anxiety as to the continuation of the present activity.

### British Demand Shifts to Lower Grade Wool Cloths

The demand for British wool goods steadily shifted to lower grade cloths during the year 1923. The Bradford district had a more quiet time and the Dewsbury makers of heavy woollens had their turn. Imports of woollen and worsted tissues increased from 13,136,558 square yards in 1922 to 23,113,852 square yards in 1923. France furnished 16,496,711 square yards of the 1923 total, an increase of nearly 6,000,000 square yards over 1922. Exports of the domestic made woollen and worsted cloths, however, advanced from 183,928,30 square yards in 1922 to 211,589,700 square yards in 1923, and re-exports from 1,358,129 square yards in 1922 to 2,125,846 square yards in 1923. Total imports of wool textiles, including raw materials, semi-manufactured and fully manufactured goods, decreased from a value of £71,974,987 in 1922 to £62,118,138 in 1923, as compared with an increase in exportations of the same classifications, the 1923 total value being £103,752,328 against £94,415,900 in 1922.—Trade Commissioner Hugh D. Butler, London, December 27.

### German Industry Producing for Domestic Needs.

From the American standpoint the German textile industry and market are significant at the present time only as consumers of raw cotton—Germany ranking next to the United Kingdom in this respect—and as competitors in foreign markets. The past year has been marked by steadily diminishing imports of raw cotton from the United States and the substitution, wherever possible, of cheaper staple, chiefly East Indian.

### United Kingdom Situation Dominated by Raw Cotton.

Raw cotton has continued to dominate the situation in the Lancashire industry during the past year. A steady advance in prices toward the end of January, 1923, checked what promised to be a substantial buying movement. In the late spring and early summer the imminent new crop overshadowed the market, and merchants at home and abroad adopted a policy of watchful waiting, feeling quite sure that there would be a large crop of American cotton which would automatically reduce prices. As a result the United Kingdom's imports of American cotton in 1923 amounted to slightly over 1,330,000 bales, or less than half those of pre-war years.

About 10 per cent of the workers were unemployed in February, according to the records of the Ministry of Labor. This proportion steadily increased until 123,000 workers, or 21.5 per cent, were unemployed in August. The September announcement of the estimated size of the American crop caused the trade to give up hope of lower prices, and the volume of buying increased rapidly, with the result that the registered number of unemployed fell to 87,311, or 15.2 per cent of the total employed. The American section of the trade had been operating on a 24-hour week since the spring, a program which was abandoned on December 1, although by a minority vote, 66 per cent of the trade favoring short time. No action can be taken except on an affirmative vote of 80 per cent or more.

Cotton yarns and manufactures, excepting apparel, were exported from Great Britain in the past three years as follows: 1923, £177,330,268; 1922, £186,920,477; and 1921, £178,665,274; and the quantities of cotton piece goods shipped abroad were: 1923, 4,141,303,700 square yards; 1922, 4,183,729,100 square yards; and 1921, 2,902,288,900 square yards. The 1923 piece goods exports were valued at £138,354,135—about £4,083,000 under the previous year. Shipments of dyed and printed piece goods also increased in size, while the cheaper cloths—gray and bleached—were exported in smaller quantities. Thus, with raw cotton prices advancing steadily during the past two years, and with no evident tendency to export cheaper classes of goods, it seems that Lancashire has not been paid any more for the same volume of exports in 1923 than in 1922—not a profitable transaction on

Numerous cotton mills in unoccupied Germany report that they are sold out until February and, in some cases, later. From an average present operation of eight hours a day for three or four days a week, they plan to work ten hours a day six days a week from the first of the year. Naturally, the revival is confined almost entirely to domestic sales, the cost of German textiles at present being too high to find profitable markets abroad. Since stocks of raw cotton at the ports and the mills are much lower than usual—in the case of mill stocks the lowest since 1920—it is reasonable to suppose that increased mill activity will be reflected almost immediately in greater cotton imports, chiefly American. It is improbable that shorter staple can be used to a greater extent than is now the case.—Acting Commercial Attache Donald L. Breed, Berlin, December 31.

### French Cotton Operations Unprofitable.

Business in the French cotton industry, while not unfavorable, was not prosperous during 1923. The price of cotton caused great hesitancy among buyers of yarn and

(Continued on Page 28)



# HOUGHTON

## HOUGHTON'S WARP CONDITIONER

*An Advertisement by Chas. E. Carpenter*

**H**OUGHTON'S WARP CONDITIONER is the last word in this character of product. It is new, yet not revolutionary. It possesses all of the merits of the softeners and tallow products which have gone before, plus those niceties of refinement or improvements which make the up-to-the-minute product which it is. It is the result of evolution rather than of revolution. It is the natural consequence of years of experience and unsparing research.

It is one thing to add the desired weight to the yarn in the size and quite another to carry that weight through every process to the finished cloth. HOUGHTON'S WARP CONDITIONER will actually do this. And it will do it better than any other product.

How do we know this?

The Houghton Research Staff obtained the cooperation of six friendly mills, and it was agreed to make an extensive practical test of the principle products used in combination with the starch and size in the conditioning process. But to identify these products only by number, so that in the operation there would be no prejudice on the part of those making the practical test.

The result was 100 per cent in favor of HOUGHTON'S WARP CONDITIONER.

The reader will thus appreciate that HOUGHTON'S WARP CONDITIONER is not a theoretical or laboratory product, but one which has been perfected with the aid and cooperation of the practical mill man.

Not the least of the important properties possessed by this product is its ability to add additional strength to the warp and thus reduce breakage to a minimum heretofore unheard of. This is due to the extraordinary penetrating power and adhesive strength of the CONDITIONER.

It carries the size into the heart of the warp and holds it there, while it also holds the fibres tighter together.

The bleaching and finishing process which reveals the defects of the older type of softeners has no terrors for HOUGHTON'S WARP CONDITIONER, for by its use the defects so generally developed by these processes are reduced to an inconsequential item.

When we were seeking a name for this improved product, for it is an improved product rather than a new one, a mill man suggested that we call it MILL HAPPINESS, as he claimed that it would relieve the average mill man of his greatest worries and make mill life for everyone happier all around.

We might have adopted the suggestion were it not for the fact that the name might mislead some to believe that the product was a quack remedy or secret compound. We are more than anxious that the mill man should realize that we are not dealers in nostrums. Our products are the result of scientific research and not compounds composed of a little of this and a little of that put together by some rule or thumb method.

HOUGHTON'S WARP CONDITIONER is a product which the mill man has wanted for years. At times the softeners and tallow products have come close to supplying the want only to fail in some one or more important detail. This product fails in none.

We feel that a personal interview with one of our representatives will be far more satisfactory than correspondence on this product, and therefore we would suggest that you 'phone or drop a note to the nearest address given below, so that the next time our representative goes over your territory he will make it a point to call on you.

'Phone or write the note now, while it is fresh in your memory.

## E. F. HOUGHTON & COMPANY

Works: Philadelphia—Chicago

ATLANTA, GA.  
1001 Healy Bldg.  
Phone: Walnut 2067

GREENSBORO, N. C.  
P. O. Box 81  
Phone: 1990

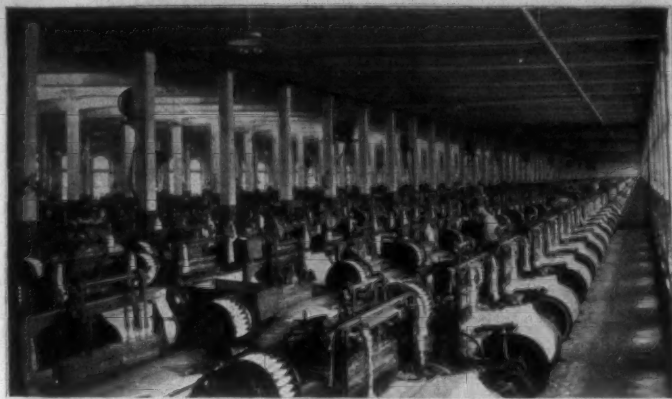
GREENVILLE, S. C.  
511 Masonic Temple  
Phone 2316

ST. LOUIS, MO.  
418 N. 3rd St.  
Phone: Olive 3559

Allentown, Pa., Baltimore, Md., Boston, Mass., Buffalo, N. Y., Cincinnati, O., Cleveland, O., Davenport, Ia., Denver, Col., Detroit, Mich., Harrisburg, Pa., Hartford, Conn., Indianapolis, Ind., Kalamazoo, Mich., Los Angeles, Cal., Milwaukee, Wis., Newark, N. J., Pittsburgh, Pa., Portland, Me., Portland, Ore., San Francisco, Cal., Seattle, Wash., Syracuse, N. Y., England, Ireland, Scotland, France, New Zealand, Australia, Norway, Spain, Belgium, Japan.

*Oils and Leathers for the Textile Industry*





*Interior Weave Room Showing Installation of Bahnson Humidifiers  
Maintaining 75 per cent Relative Humidity*

## "A Word to the Wise"

Manufacturer will be sufficient. Its the BAHNSON System you will want for your mill before the windy weather sets in.

A Humidifying System that is **Automatically Controlled**. It is through the individual automatic control feature of the BAHNSON System that the user eliminates dry spots in the mill.

A Humidifying System that distributes the humidity **evenly** throughout the mill. It is through the fan on each BAHNSON Humidifier that the user will keep the inside air freely circulating, obtaining thereby an even and thorough distribution of moisture throughout the mill.

Users of the BAHNSON Humidifier will tell you that its the BAHNSON System you want installed in your mill before the windy weather sets in.

**Our services are yours for the asking**

## The BAHNSON Company Humidification Engineers

Winston-Salem, N. C. New York Office: 437 Fifth Avenue

# Practical Discussions By Practical Men

### Another Answer to Waste.

Editor Bulletin:

I noticed in the discussion department of February 7th issue of the Bulletin where Waste was given a few card settings, also how to increase the amount of strips from the top flats. There is but one method under the sun whereby to increase or decrease the amount of top strippings on a card, and that is by the front stripping plate. I don't care what other settings may be changed, it will have no effect upon the amount of flat strips. If you wish to take out more strips, set away; if less strips are wanted, set closer to cylinder. This setting is all that is necessary for the amount of strips you desire to remove.

When you are taking out enough strips so they hang together by a few fibres from one end of the flat to the other without falling apart, then you are getting just as good a top stripping as any man needs. Try this method and watch the results.

Now, with regard to setting the top flats. That method of setting farther away at the back than at the front is all theory and not practical. Why some men hold on to it is more than I was ever able to see. They will tell you to do this but never tell you why. If they are progressive setters they will give us a reason why they do believe in such a setting for their top flats. The writer will tell them why he does not believe in such a setting. If you want to get a clean, nice web, set all the way, that is at every setting point to a No. 7 gauge where of course you have a good floor which all cards should be set upon.

Now, if you have a floor where your cards are at all times reeling and rocking you cannot set so close, but for Heaven's sake never get farther away than a No. 10 gauge. Now, understand me, all the way at every setting point not a 12 at the back, then a 10, then an 8 or 9, then an 7 and so on, but at each setting point the same. I have seen some grinders who said they were setting to a 7 when it was really a 17, and then I have seen them set to a 12 when they were 7. Men, you have a gauge to go by. Why not use it? Now, I for one believe that the only combing the fibres get in that between the top flats and the cylinders. There may be other parts of the card that help in the combing of the fibres but I have never been able to find them, and I have looked her over pretty close, but no matter where you set or what you set to the only place to regulate your top flat strippings is at the front stripping plate.

Bob.

### Mossberg Pressed Steel Beam Heads.

The Mossberg Pressed Steel Corporation report that they recently received an order from a large loom manufacturer for the Mossberg All Steel loom beam heads for 50 looms going to the B. B. & R. Knight Mills.

### Guard for Mill Lamps.

A new guard for mill type lamps has just been announced by the Flexible Steel Lacing Company. The guard is especially designed for the new 25 and 50 watt type lamps and carries a very effective protector, made of expanded steel, reinforced, tinned and designed for long life and service. The guard is known as the "Flexco-Lok" key locking guards, the lock and key feature being of exceptionally good design.

### Invents Finisher Lapper Machine.

J. B. Long, overseer of carding at the Wiscassett Mills, Albemarle, N. C., has recently patented a finisher lapper machine that is designed to prevent laps from splitting. The machine has been fully tried out at the Wiscassett Mills and the report of the card tender indicates that it operates successfully in keeping laps from splitting. Ben Bingham, card tender, who made the test, stated that the machine not only prevented split laps, but that less waste is made when this machine is used and that the yarn is more even.

Mr. Long plans to begin manufacture of his machine at an early date and believes that it offers the mills a very successful aid to card room troubles.

### New du Pont Color.

Wilmington, Del.—A new direct color, known as Pontamine Brown D3GN, has just been placed on the market by the dyestuffs department of E. I. du Pont de Nemours & Co. It is intended for dyeing cotton or for half silk hosiery where the combination of colors used must be fast to the acid employed in scrooping. It can be used on cotton in all stages of manufacture, not only for self shades of tan and yellow browns, but also in combination for producing olives, slate browns and similar shades. It can also be applied on silk, paper, hemp, jute and leather.

The new color is said to have good solubility and dyes very evenly. It is brighter, slightly redder, faster to acids, and more soluble than Pontamine Brown D3G, but resembles this color closely in all other respects.





### Distributor Service

BOSTON, MASS.  
Lewis E. Tracy Co.

CHARLOTTE, N. C.  
Charlotte Supply Co.

FALL RIVER, MASS.  
Wm. F. Harticon

GREENVILLE, S. C.  
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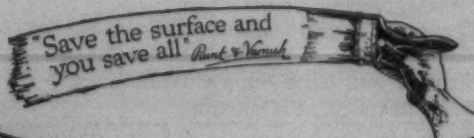
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WOONSOCKET, R. I.  
Pinault & Choquette



Boston Manufacturing Company  
Established 1813  
Waltham, Mass.

### "Finest in America"

IN this modern textile mill, the Boston Manufacturing Company makes Gilbrae Gingham—generally known as the "finest in America."

Here, under ideal working conditions, contented workers were the first to produce goods of this character from raw materials to finished product.

Abundant light, reflected from OJACO Mill-Whitened walls and ceilings, aids the workers' vision and thereby helps greatly to increase production.

For further details concerning OJACO Mill White, consult the nearest OJACO distributor listed opposite, or write to us direct.

**Oliver Johnson & Co., Inc.**  
Paint Makers since 1833  
PROVIDENCE



# Manufacture of Denim

MANY years ago practically all work clothing worn in Western Europe and Great Britain was made of cheap smooth-finished woolen cloths. Eventually the demand for a less expensive cloth became so great that as soon as cotton cloths began to be made in quantity some enterprising manufacturer imitated the cloths made of wool and the production of heavy cotton work-cloths started.

In the Department of Gard, France, about 450 miles southeast of Paris, there was a little French city called Nimes, whose cotton cloth makers took up the business of making this heavy cotton work cloth. They made it so well that they soon earned quite a reputation, and the cloth became known as "Serge de Nimes." As time went on the name was abbreviated and anglicized, until all there is left is the name "denim," well known throughout all English-speaking and many other countries.

It is used principally for overalls or heavy work clothing, and to a small extent for bags and other purposes. During the war the United States Government used large quantities of it for soldiers' and sailors' bags.

Denim, being essentially a heavy work cloth, is made of comparatively coarse yarns, woven closely together into a firm cloth, in order

to make a semi-rigid, compact fabric, which will not only wear well but at the same time will prevent dirt and other substances from penetrating the material and so damaging or soiling the garment underneath. It, of course, must be comparatively smooth, present a fairly good appearance, of a reasonably fast dye and a color generally acceptable to the people who buy the garment. At the same time, it must be sold at a price which will not make the garment too expensive for this purchaser.

Denim is about as standard a fabric as there is in the cotton goods trade today. By that it is not meant that each mill making this fabric uses exactly the same cotton, size of yarns, dyestuffs, construction, etc., but that these various factors are near enough alike to produce a cloth of the same width, weight and general characteristics, which cloth is acceptable for the purpose intended.

Denim is usually made to be 28 inches finished width. At times it is purposely made 28½ inches, but the majority of all denim sold is on the 28-inch basis. The weave used is a two-and-one, three-harness twill (sometimes called a two-and-one, three-leaf twill). It is a warp-face fabric, meaning that the majority of the yarn running parallel to the selvage is on top of the filling yarns.

The cloth is made in various weights, and is identified in the trade by these weights—i. e., how many yards there are to a pound in any particular cloth, always figuring, of course, on the same width basis, 28 inches. Thus we have the staple fabrics, called 2.00 (two-yard), 2.20 (two-twenty), 2.40, 2.45, 2.60, 2.80 and 3.00 yards, etc., goods. The two-yard weight is also called 8-ounce goods. Other weights are made, but the above cover the general market cloths.

Denim is generally found in one of two colors, a deep blue or a brown, blue predominating, it is safe to say, 95 per cent of the time. The dyestuff used by the majority of mills for blue denim is indigo, which has proven best adapted to the purpose, when color and cost are taken into consideration.

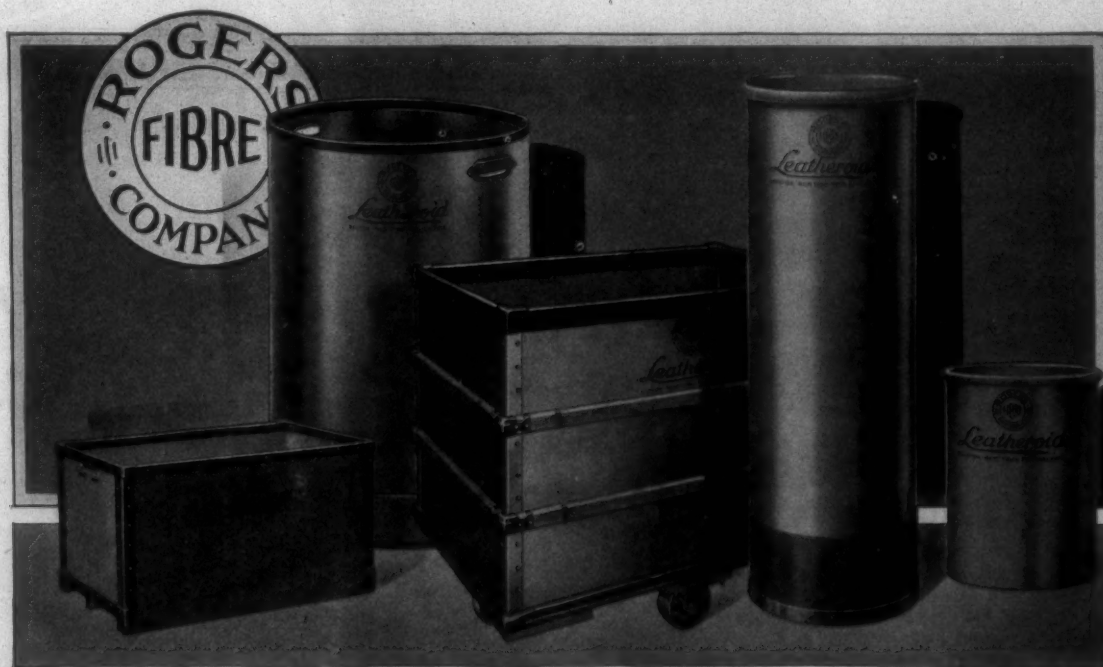
The warp yarns, always colored either blue or brown, were formerly all stock-dyed; that is, the loose fibre was dyed and then spun into yarn. This is still done today; but dyeing the yarns after spinning is rapidly gaining a foothold. The filling yarns are either white, a combination blue and white, or brown and white. By white the natural color of the cotton is meant, and not a bleached white, as this would raise the cost, and there is no necessity for a bleached yarn.

Where the two-color combination

is wanted, what is called a "double and twist" or a "double-twisted" yarn is used. This is obtained by taking two smaller yarns, one white and one colored, and twisting the yarns together, making an angular-striped or spiral two-color effect. When the yarns are then woven into the cloth, a dotted or spotted appearance results. In response to the demands for cheapening the cloth, denims have been made with a two-colored filling yarn, not made of two separate yarns, but by using instead two-colored rovings on the spinning machine. This produces to a great degree the same effect when woven and finished, but the cloth-filling ways is not as strong as if the same size double-twisted filling yarn were used.

By using either the plain white or two-colored filling described above, two general types of denim are produced, namely, the "white-back" and the "double and twist." The former, the biggest seller, is usually made in the 2.00, 2.20 and 2.45-yard weights, the "two-twenty" predominating by a great margin, and probably comprising 60 per cent of all the denim made in this country today. The "double and twist" is usually manufactured in the 2.40, 2.60, 2.80 and 3.00 weights, the 2.40 predominating and probably comprising 25 per cent of the denim consumed. The remaining 15 per

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cent is divided among the other weights of both types.

The warp yarns used in denims vary from about 7s to 12s, the average denims using 8s or 9s. The filling yarns vary more, running from about 9s to 18s, the majority, however, being from 11s to 16s. The cotton for these yarns has to be of good strength and of the staple necessary for the yarn size. In the finished cloth, strength is the main factor to be considered. The color, however, does not necessarily have to be a good white.

The "count" of denim, or, in other words, the number of warp and filling yarns to the inch, varies with the quality and size of yarn the mill uses and the type of mill weaving the cloth, as well as the quality of material wanted. It may be said that, generally, considering all denim, there will be from about 60 to 75 warp yarns to the inch and 34 to 46 filling yarns to the inch. The result of many tests made by the writer over a period of years, on quite a number of various well-known makes of standard 28-inch, 2.20 denim, showed that the average count employed was 69 by 42, or 69 warp yarns and 42 filling yarns to the inch. The average yarn sizes for these same samples were 9s for the warp and 14s for the filling.

On account of the larger number and greater individual strength of the warp yarns denim will break stronger warp ways than filling ways. The average market 2.20 will break between 125 and 140 pounds when tested under ordinary weather conditions, under ordinary commercial methods of testing. This amount is far more than is necessary to resist any strain which may come on the cloth in that direction. The filling strength will average about 50 to 55 pounds under the same conditions, and 50 pounds is about as low as it should be to assure no trouble in making up the garments in their use afterwards. If any denim of 2.20 weight averages these amounts it can be counted on to be satisfactory. Naturally certain places and sometimes whole pieces may and will vary above and below, but the average is important.

Care should be taken not to be influenced by any arbitrary, theoretical or laboratory standards, propounded perhaps by well-meaning enthusiasts not versed in commercial testing, as these standards are usually not founded on practical working conditions and are unfair both to the cloth manufacturer and to the garment maker. The use of standards proved to be practical under commercial usage is the only fair way to both parties.

Denim is processed very little from the time it leaves the room until it is shipped. If it is of a very low grade it is only baled up. If a better grade, it may be calendered, or a slight stiffening material be put into it and then dried and calendered.

In purchasing denim the strength of the fabric warp ways does not have to be considered as that will invariably be of sufficient strength. The filling strength may be low, however, and if there is a doubt should be checked. The exact construction and weight are of no con-

sequence to the garment manufacturer as long as the cloth is otherwise all right. What he should have is a cloth of the proper width, of a fairly good smooth appearance, a proper and even color, reasonably resistant to crocking and fading and to have a full bodied "handle" or "feel." It will then do the work it is made for, and that in the last analysis is what counts.

The average tendency nowadays seems to be towards a lighter cloth, of a cheaper price, but the overall manufacturer who does not desire returned goods, but wishes to have satisfied customers, will buy the better and heavier cloth of reliable makers, thereby in the long run reaping greater profits. — Clothing Trade Journal.

#### Mill Men of North and South Carolina Plan Joint Meeting.

Greensboro, N. C.—At a meeting of the executive committee of the North Carolina Cotton Manufacturers' Association, held here Thursday afternoon, it was decided that the annual meeting of the association will be held at Blowing Rock, N. C., June 27-28.

The South Carolina Cotton Manufacturers' Association will meet with the North Carolinians there, a joint affair.

The question of valuation of stock in process of manufacture for the purpose of Federal taxation was discussed by the mill men, a paper on the subject being read by Reginald Baldwin, of Marion, N. C.

#### New Bedford Fine Goods Mills Do Better Than Yarn Mills.

New Bedford, Mass.—Earnings of approximately \$30 per share on the common stock after allowing for Federal taxes but before making any deduction for depreciation, were shown by two of the New Bedford fine cotton goods mills for the year 1923, when the financial balance sheets were presented at the regular annual meeting of the stockholders which was held recently. These were made in spite of adverse business conditions in the cotton goods markets which have compelled many New England cotton mills to curtail production very heavily or to shut down altogether.

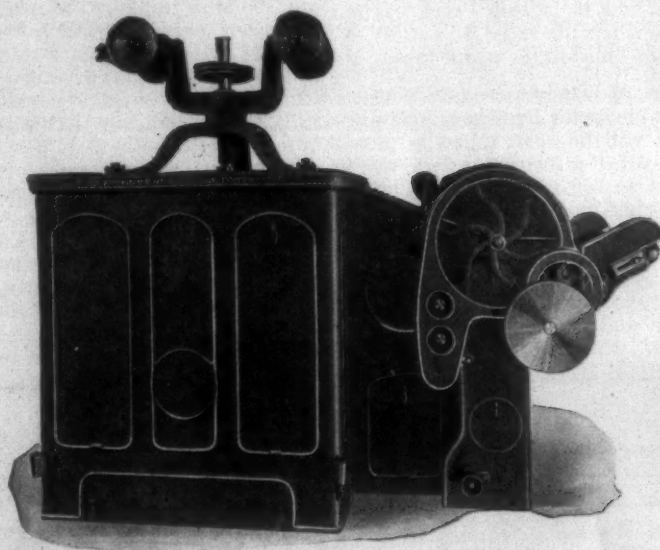
On the other hand three of New Bedford's fine combed yarn spinning mills, which also issued balance sheets at their regular annual stockholders' meetings, plainly showed in their financial results for the year the results of the deep depression that has affected the cotton yarn industry during a greater part of the year and has made it impossible for more than a small part of the available spinning equipment to be operated steadily. Two of the three local yarn mills which issued balance sheets, the Quissett Mill and the Holmes Manufacturing Company are known far and wide as among the most prosperous, successful and well managed yarn mills in the United States; yet, if full allowance is made for depreciation, the earnings they show during the past year were hardly more than enough to cover the dividends paid during the year, and little could be added to surplus.

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# Hydrogen Peroxide Bleaching

THE bleaching of textile materials by the hydrogen peroxide process was recently discussed before the Dyers' Guild of Bradford by J. E. Weber, beginning with a sketch of the discovery of peroxide of hydrogen. About a century ago, in the year 1818, he said, Thenard discovered an inorganic compound unique in its wonderful properties. He was experimenting with various acids to determine their effect on barium peroxide, and obtained a liquid which he believed was an oxidized acid. Later he showed that the liquid he had discovered was "oxygenated water" or "eau oxygénée." Hydrogen peroxide made from barium peroxide is to this day known by that name in France.

The amount of oxygen present in hydrogen peroxide is twice that in water, and it is this extra oxygen which, when liberated, has most remarkable bleaching properties.

Since hydrogen peroxide consists of the elements hydrogen and oxygen, it will be seen that the possibilities of its formation are many. This is so for it has been obtained by passing moist oxygen through a tube at 2,000 degrees C. and suddenly chilling the gases leaving the tube; by exposing water to ultra violet rays; by the oxidation of turpentine and other oils in the presence of water; by blowing steam

into flame of hydrogen; by exposing moist ether to sunlight by the slow oxidation of metals such as copper, zinc and lead. The large quantities of hydrogen peroxide for technical uses are not made by these methods.

Two chemists, Schonbein and Schoene, who did some work on the properties of hydrogen peroxide, believed that it was present in the atmosphere, in rain water and in snow. Schoene went to the trouble of collecting the rain and snow which fell during the period of one year, and in his published paper states that peroxide of hydrogen is present in small quantities and to the extent of 1/25 to one part per million of rain and snow.

Peroxide for bleaching is made in large quantities from barium peroxide. This is the main source of the hydrogen peroxide which is consumed in the various bleaching processes. The manufacture of barium peroxide entails considerable skill. This country (Britain), it is interesting to note, provides all the raw materials, the barytes or heavy spar being mined in Derbyshire, Ayrshire and other places. The mineral is reduced to barium sulphide, from which barium carbonate is made. The carbonate is reduced to barium monoxide, this being an especially delicate operation to ensure barium peroxide of the

highest quality. The barium monoxide is converted into barium peroxide which is suitable for the manufacture of hydrogen peroxide. This may sound like a mere string of chemical changes, but in actual practice it means a chemical plant, which is the product of the highly skilled engineer, the co-operation of the chemist and an organization of which modern efficient business is alone capable.

The barium peroxide is purified before it is made into hydrogen peroxide, giving a uniform, pure and stable product. The manufacture of the hydrogen peroxide requires almost as much expert manipulation as that entailed in the making of barium peroxide. Thenard's method of preparing hydrogen peroxide is interesting historically. He dissolved the barium peroxide in hydrochloric acid to obtain barium chloride and peroxide of hydrogen. To remove the soluble barium salt he added silver sulphate, which precipitated both the barium and the chloride. Commercially hydrogen peroxide is not prepared in this way, for the barium peroxide, after having undergone sundry chemical processes, is acted on by sulphuric acid, whereby barium sulphate is produced. This sulphate, although chemically the same as natural barytes, in passing through the various phases of man-

ufacture emerges physically different from the samples in front of me. Whereas the mined heavy spar is distinctly coarse and crystalline, the precipitated barium sulphate is an exceedingly fine amorphous powder, which finds extended uses as a basis for paints and enamels and for the striking of pigment lakes.

The sodium sulphide is used in the dehairing of skins; in the degumming of silk, and, most important of all, in the manufacture of sulphur dyestuffs and their application to the dyeing of cotton goods.

Having dealt in outline with the manufacture of barium peroxide, I will now return to hydrogen peroxide. The strength of the peroxide usually supplied to the trade is 12 volumes strength. The expression "12 volumes hydrogen peroxide" means that a given volume of the peroxide will yield 12 times the same volume of oxygen. For example, 6½ gallons Imp. of 12 volumes hydrogen peroxide will occupy a space of one cubic foot, and when it yields up all its oxygen, leaving water behind, this oxygen will occupy a space of 12 cubic feet. In the same way 6½ gallons of one volume hydrogen peroxide, which again occupies a space of one cubic foot, only gives one cubic foot of oxygen.

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We can replace cubic feet by gallons:

1 gallon of 2 volumes=2 gallons of one volume

1 gallon of 12 volumes=2 gallons of six volumes.

"Volumes" then gives us a simple method of transferring from one strength of peroxide to another, these remarks applying the making up of bleaching baths. Thus, 20 gallons of 12 volumes strength hydrogen peroxide will give 120 gallons of 2 volumes strength. To determine the volume strength of a bleaching bath from the following:

1. Number of gallons of hydrogen peroxide.

2. Its volume strength.

3. Number of gallons of bleaching bath.

Vol. strength = Gallons hydrogen peroxide  $\times$  vol. strength  $\div$  (Gallons of bath).

Ex. Given 20 gallons of 12 volume strength hydrogen peroxide what is the volume strength when it is made up with water to give 120 gallons?

Vol. strength  $(20 \times 12) \div 120 = 2$ .

The bleaching bath is therefore 2 volume strength.

To determine the number of gallons of bleaching bath from the following:

1. Number of gallons of hydrogen peroxide.

2. Its volume strength.

3. Volume strength of bleaching bath required.

Ex. Given 20 gallons of 12 volume hydrogen peroxide, how many gallons of a 2 volume strength bleaching bath will it give?

Number of gallons  $(20 \times 12) \div 2 = 120$  gallons.

If we take 20 gallons of 12 volume hydrogen peroxide and add water to it to make 120 gallons we then have a 2 volume bath. A clear understanding of the manipulation of volume strengths is an asset to the bleacher.

The methods adopted for the testing of hydrogen peroxide strengths are three:

1. The gasometric method.

2. The iodometric method.

3. The permanganate method (volumetric).

For simplicity I strongly recommend the permanganate method. In both the gasometric method and the permanganate method use is made of the fact that in the presence of sulphuric acid, hydrogen peroxide reacts quantitatively with potassium permanganate.

In the gasometric method the volume of oxygen is measured in a nitro-meter. Twenty c.c. of a saturated potassium permanganate solution are mixed with 20 c.c. of weak sulphuric acid in a conical flask. Into the same flask is put a test tube containing one c.c. of the hydrogen peroxide for testing. The conical flask is connected up with the nitrometer, and the usual precautions of adjusting the mercury are taken. The peroxide and permanganate are mixed and the mercury adjusted. The difference in the two mercury levels are read off, and gives the volume strength of the peroxide. In the iodometric method (Kingzett) the hydrogen peroxide

solution is diluted until its hydrogen peroxide content corresponds to about two volumes strength, and of this solution 10 c.c. are used in the analysis.

Procedure.—About two grams of potassium iodide are placed in a conical flask and dissolved in 200 c.c. of water, 30 c.c. of sulphuric acid (1:2) are added, and then, with constant stirring, 10 c.c. of the hydrogen peroxide solution are added from a pipette. After standing five minutes the iodine liberated in accordance with the equation, is titrated by means of tenth-normal sodium thiosulphate. The number of c.c. of deci-normal thiosulphate required for 2 c.c. of the original hydrogen peroxide divided by 3.5 gives the volume strength of the peroxide.

In the permanganate method (volumetric) of determining volume strengths of hydrogen peroxide and bleaching the actual testing is simple, although the theory underlying the testing may appear complex. As already mentioned, hydrogen peroxide reacts quantitatively with potassium permanganate in the presence of sulphuric acid.

In testing, take up 2 c.c. of the solution of hydrogen peroxide in a pipette which has already been washed out with the hydrogen peroxide, and run it into a 100 c.c. of water. Add 20 to 30 c.c. of dilute sulphuric acid (1:3) and titrate the whole against the standard solution of potassium permanganate (2.825 grams per liter) until a permanent pink coloration is obtained. The number of c.c. of potassium per-

manganate required divided by 4 gives the volume strength of the hydrogen peroxide. Thus, a 12 volume strength hydrogen peroxide will require 48 c.c. permanganate. The addition of the first drop of permanganate may cause a pink coloration. This is due to insufficient sulphuric acid present or to there not being any peroxide in the solution.

To test qualitatively for hydrogen peroxide the titanium or chromic acid methods can be used. Titanous chloride gives a yellow coloration with hydrogen peroxide. On adding potassium chromate to hydrogen peroxide acidified with dilute sulphuric acid a blue color is developed. Either of these methods will detect very small traces of hydrogen peroxide.

A good deal of confusion exists in the minds of many on this point. By a stable peroxide, we understand one that, owing to its freedom from impurities, will not lose its oxygen on storage or excessively in the bleaching bath. It is sometimes said that an indication of a good peroxide is the presence of gas rising through the liquid. These bubbles on the contrary are an indication of an unstable peroxide, for the bubbles are nothing less than the valuable oxygen being liberated and the peroxide remaining is therefore weaker in strength.

An acid solution of hydrogen peroxide is more stable than an alkaline solution, and consequently all hydrogen peroxide contains a small

(Continued on Page 24)

## Republic Iron & Steel Company Saves with McClave 2-A Grates

THAT the Republic Iron & Steel Company recognizes the unique advantages of McClave 2-A Grates is evidenced by the installations made in several of the company's plants. All of these installations are giving excellent service.

With all grades of bituminous and semi-bituminous coal, lignite, or bagasse, the McClave 2-A Grate gives high combustion efficiency with strict economy of fuel. The specially designed fire surface practically prevents all sifting of unburned fuel, even during shaking. Ample and evenly distributed air space is provided to insure complete combustion.

Sectional tops make replacement of burnt-out sections easy and inexpensive, reducing maintenance.

An interesting booklet describes and illustrates all the advantages of the McClave 2-A Grate. You'll find it useful—send for a copy today.

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Republic Iron & Steel Company plant at Youngstown, Ohio, where McClave 2-A Grates are used under Stirling boilers—one of several Republic installations of McClave Grates.



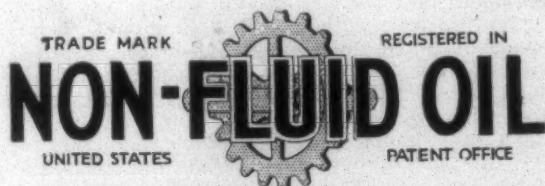
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# AT LESS COST PER MONTH

## Butterworth Plant in Greenville.

When a concern 104 years old establishes a branch plant 750 miles from its principal factory, it must be that those responsible for the continued growth of the company believe in the business to be had in the locality of the new plant: This, and a desire to be of still greater service.

This particularly refers to the recent acquisition of the plant of the Greenville Iron Works, Inc., at Greenville, S. C., by H. W. Butterworth & Sons Co., makers of textile finishing machinery, with home offices and principal works in Philadelphia.

The Butterworth Greenville plant consists of a completely fitted up foundry and machine shop. Its equipment includes the latest type lathes, planers, milling machines, drill presses, as well as a shaper, forge and various small power appliances. A complete tool room is included.

In addition to full foundry equipment, there is also a blacksmith shop. This is capable of meeting the needs of the combined foundry and machine shop.

The entire structure—foundry and machine shop—has a frontage on the C. & G. divisions of the Southern Railroad.

The motive power is electrical throughout. A completely fitted up office is included.

Speaking of taking over the Greenville plant, Mr. Harry W. Butterworth, president of the company, said: "We believe that the growth to date of the textile industry in the South warrants our placing an organization and plant there. We came to this conclusion speedily after having opened a branch office in the Woodside Building. This is under the direction of Mr. J. Ebert Butterworth, treasurer of the company.

"Our principal idea is to give the South more and more service. The South cannot move up to us, but we can and have come to the South.

"At first, the work of the Greenville plant will be confined chiefly to the making of minor parts, repairs, and the refilling of rolls. In the latter item alone, considerable haulage expense will be eliminated while weeks of what is often valuable time will be saved.

"Of course, as fast as it can, the new plant will take over other lines of work. Whether or not, however, we will eventually enlarge our Greenville plant to handle the work of the entire Southern territory, will depend largely upon the need that is shown for the larger plant."

About six weeks or two months will be required to put the new plant in operation.

## Quarterly Dividends by Fall River Mills Lowest Since War.

Fall River, Mass.—The dividend rate for Fall River Mills in the first quarter of 1924 is the lowest since the World War, according to the figures furnished by G. E. Haffards & Co. The average is 1.514 plus per cent on a capitalization of \$43,315,000, the sum of \$656,175 being distributed to stockholders during this

period. The decrease is primarily due to the absence of extra dividends, the King Philip Mills contributing nearly \$600,000 to the grand total of the previous quarter by a special 25 per cent cash dividend. Other corporations have decreased the rate of dividend from 2 to 1½ per cent, which is also a contributing factor to the poor showing for the quarter.

The American Linen, Granite Mills, Osborn Mills and Stafford Mills failed to declare dividends during the first quarter, in addition to the corporations which failed to declare in the fourth quarter. These were the Arkwright Mills, Laurel Lake common and preferred, Parker common and preferred, Seaconnet Mills and Troy C. & W. Mfy.

General business depression is given as the reason for decrease in dividends, and in some instances corporations have passed their dividends solely because of the unsatisfactory outlook for the future. In addition to the King Philip, the Luther Manufacturing Company dropped from 10 per cent to 2 per cent this quarter, these two corporations furnishing over \$600,000 alone to last quarter's total, and which is missing this quarter.

The Davis Mills dropped from 3½ to 1½, also the extra rate last quarter was for the purpose of bringing the corporation to an 8 per cent basis for the year.

## Cloth Imports To Be Classified.

Washington.—Reports of imports of cotton goods by major trade designations of the merchandise will be issued hereafter monthly by the Department of Commerce, an arrangement to this effect having been completed with the Treasury Department.

Imports will be reported separately as to dotted Swiss, crepes, organdies, lawns and nainsooks; all other bleached fine goods; unbleached sateens, eight or more harness warp; all other sateens eight or more harness warp; sateens with less than eight harness warp; piques, Bedford cords and ratines; voiles; broadcloths, plain woven; poplins and reps; gingham; all jacquard woven fabrics.

## Crompton & Knowles Had Good Year.

Homer Gage, president of the company, makes the following statement in the C. & K. Pickings: "During the past year, Crompton & Knowles Loom Works has been fortunate in being able to secure a volume of business sufficient to maintain the uninterrupted operation of its plants. The depression which has affected the textile industry as a whole during the past few months has not as yet been reflected in the business of the Loom Works. That it will, however, have some effect on the business of the new year, is inevitable. Instead of feeling any discouragement, this should be but an added stimulus to increase the efficiency of our operations, and to make an extra effort so to improve the quality and design of our product as to make it quite indispensable to the progressive manufacturer."



## Selecting The Motor

THE selection of the correct type of motor for a given drive of a machine is fully as important as the selection of the right size, getting a good make, or having it properly installed.

Very often the tendency, even among skilled mechanics, is to consider a motor of a given horsepower suitable for the drive of any type of machine under any conditions which calls for that horsepower.

There are a great many surrounding conditions which have to be taken into account in order to select the right type of motor for a given job. Of course the horsepower and speed have to fit the machine's requirements, but beyond this there are considerations which are quite as important.

Starting conditions often determine the type of motor to be taken. If a machine has an unusual inertia or a high frictional characteristic or if the start must be at comparatively low speed in comparison to the operating speed, a motor type which has high initial torque must be selected. The choice between the high torque types is limited by whether the electrical conditions allow a relatively high starting current or not. If continued operation at part speed is a requirement only particular types are allowable. Special control apparatus is also necessary for these conditions.

Of course direct and alternating currents call for different motor types and characteristics.

If direct current exists in a mill it requires an entirely different set of facts and study and offers a different set of problems.

The speed variation is an important point in motor selection. That is, if starting speed is widely different from running speed or from maximum speed the percentage variation as well as the operating point must be considered in selecting motor type.

Simplicity of construction must always be taken into account in the selection of the motor. Often special requirements will limit the choice to a single type which may have disadvantages of complicated or delicate construction which must be put up with in order to obtain other necessary characteristics, but if this is not the case the simplest type should be sought. Cost is an important factor always, but it will be found that for a given job and hence for a given type of motor the cost variation is largely a matter of the choice between makes rather than types of motors.

Size, i. e., dimensions, of motors is often a factor from the point of view of space limits in which they must be located. Thus sometimes a low speed motor which is larger than one of higher speed of the same horsepower is not used even though the low speed would be an advantage in torque and operating ratio characteristics because of the size of the low speed motor. Weight is sometimes a factor. Cooling characteristics are often a vitally important item, particularly where the motor is to be located where the temperature is constantly or occa-

sionally high. Temperature of location also has a great deal to do with the choice of a motor up to the full horsepower required of it for the drive as a fully loaded motor is more sensitive to overload and to damage when operated at a high temperature.

Mountings are sometimes important as are accessibility, liability to repair and ease of part replacement. Moisture resistance sometimes becomes a deciding factor.

Usually, however, it is the load, line and speed characteristics which determine the choice. Direct current motors will only be briefly considered as their application is limited. The shunt motor is a good constant speed motor. Its speed varies only slightly from starting and low speed to full load. Its starting current characteristic is good, and speed changes may be had by variation of the impressed E. M. F. or by variations in the flux, the latter of these, however, is not readily obtained.

Variations in speed are usually obtained by inserting a resistance in the armature circuit. This affects the E. M. F. and consequently the speed, but leaves the torque unchanged as the torque is purely a function of the armature current and the flux. Speed regulation is not good at low speed when this method is employed and efficiency is low at low speeds. Speed variations in limited amounts may be had by insertion of resistance in the shunt field circuit, but the range of regulation is small. This gives variation up to 30 per cent. This type is a constant output motor, for as the speed increases the torque falls. If very great ratios of regulation are required a combination of field and armature resistances will produce decided results, but of course with a proportional loss of efficiency under peculiar operating conditions. The series motor is very necessary and useful under certain conditions. Under others its use is not to be recommended.

It develops a high starting torque. This is useful in high frictional or inertia installations and makes the motor suitable for direct connection and rigid coupled drives. The high starting torque is accomplished without excessive starting current, which is of course an advantage.

The torque of this type is independent of the voltage in any direct way and is a function of the current. At low speeds it is proportional to the square of the current, but as the speed is increased the proportion is nearly direct. Thus torque is fairly well maintained and at the same time it is maximum at starting when it is most needed. Speed builds up rapidly and is cumulative. It is therefore necessary, as has been said, to have the motor rigidly direct connected to the driven member so that no excessive speeds may be developed. It is also important to have the driven member require the amount of power developed by a particular series motor so that the motor does not run away with the machine.

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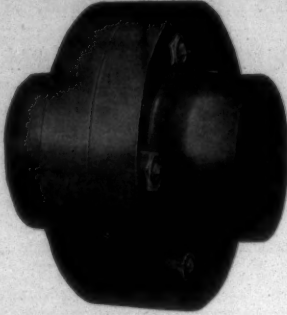
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HANGERS

### The **W. B. WOOD** Line

SONS CO.

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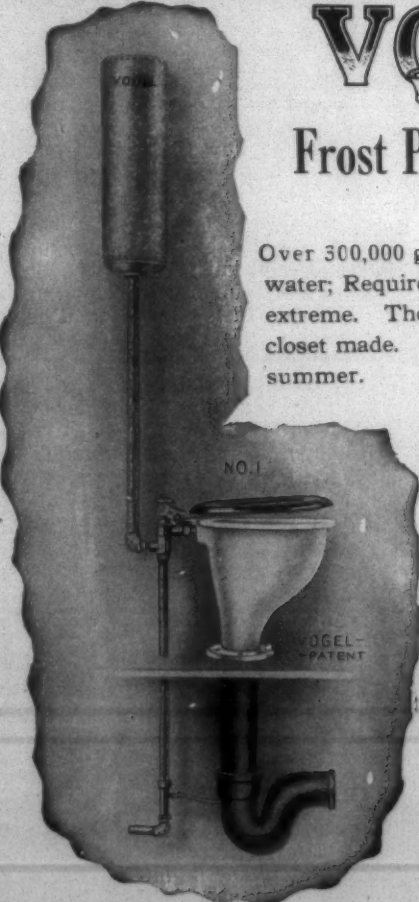
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# SOUTHERN TEXTILE BULLETIN

Member of Audit Bureau of Circulations

Published Every Thursday by  
**CLARK PUBLISHING COMPANY**  
Offices: 39-41 S. Church St., Charlotte, N. C.

**THURSDAY, FEBRUARY 14, 1924**

DAVID CLARK  
D. H. HILL, JR.  
JUNIOUS M. SMITH

Managing Editor  
Associate Editor  
Business Manager

## SUBSCRIPTION

One year, payable in advance \$2.00  
Other Countries in Postal Union 4.00  
Single Copies .10

Contributions on subjects pertaining to cotton, its manufacture and distribution, are requested. Contributed articles do not necessarily reflect the opinion of the publishers. Items pertaining to new mills, extensions, etc., are solicited.

## ADVERTISING

Advertising rates furnished upon application.  
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### Bucketing Yarn Orders.

WHILE in New York last week we were reliably informed that yarn speculative houses were bucketing most of the yarn orders being placed for later delivery and that such orders amount to a considerable volume.

We mean that when a weaver or knitter enters the market for yarn for March, April and May delivery the speculative yarn houses sell him the yarn and in many cases specify the mill from which the yarn is to come, but do not send the order to any mill.

The holding back of a large volume of such orders makes the situation look worse than it is because the mills receiving inquiries and orders, in reduced volume, become desperate and accept lower prices.

The object in bucketing or holding back the orders is to weaken yarn prices and then be able to place the orders with the mills at lower prices after the decline, thereby not only making the legitimate five per cent commission but several cents difference in price.

There is not another business in this country that allows a bunch of speculative pirates to play such a game upon them and there is no hope for the yarn manufacturing industry until an end is put to such proceedings.

If the yarn mills of the South have any backbone or any regard for the interests of their stockholders they will call a halt upon such practices.

There is not another business in the United States where the man selling the manufactured article does not know the terms upon which it is sold.

The yarn mills, with few exceptions, do not know whether or not they are selling their output through the yarn merchant as agents or selling to such merchants.

If the yarn mill managers can do nothing else they should at least find out whether the house with whom they trade is selling their output on a 5 per cent commission

or are buying the yarn with a 5 and 3 per cent discount.

Any business man ought to be ashamed of such a condition.

In order to correct the present rotten situation the yarn mills should begin at the fundamentals.

First, a letter should be addressed to the yarn houses asking them to state definitely whether or not they are selling for a commission or are buying yarns.

There is nothing dishonest in buying yarns for speculative purposes provided such purchases are open and above board, but it is dishonest and crooked to pretend to be selling yarn on a commission basis and yet make an additional profit upon sales.

There are two ways of speculating in yarn.

First, to buy the yarn from the spinner less 5 and 3 per cent and then sell it for more than the spinner's price.

Second, to sell the yarn to the weaver and knitter and then buy it from the spinner at a lower price.

The second is the practice of the present moment and we charge that there is a concerted effort among the yarn speculators to bucket or withhold orders until the absence of such orders weakens the market still further and the speculators can cover their sales by buying from the mills at lower prices.

Last July and August, when 20-2 yarns were around 38 to 40 cents, there was heavy bucketing of orders and it is well known that the yarn speculators lost heavily when the cotton advance came.

Should we get bad weather in March and April and there be indications of a 1924 crop of 11,000,000 bales, or less, the speculators are going to get burnt again.

In the meantime, however, the concerted holding back of orders may cause weak kneed spinners to accept lower figures.

Many spinners have customers who usually specify their yarn and it would be interesting if spinners would write to such customers and ask for a list of the orders they have placed for their yarn.

Even those accustomed to being the football of yarn speculators would get a shock if they found that certain speculators had sold their yarn to weavers or knitters and that although their yarn had been specified, they had not even been requested to quote a price.

A fine business is it not, when Mr. Smith, a weaver, buys 50,000 pounds of yarn with the guarantee that it will be made by Mr. Jones, and yet Mr. Jones does not know anything about the transaction?

We know of one instance in which a New York knitter bought 200,000 pounds of 22-1 yarn with the specification that it was to come from three certain Southern mills, and although neither of the three mills knew anything about it at the time they furnished the yarn at 2 cents per pound less than the knitter paid.

The speculator made his 5 per cent plus \$4,000, and if we were to publish the names of the managers of the three mills whose stockholders lost the \$4,000, they would strongly object.

It is reported that within the past few days one mill sold 50,000 of 20-2 at 49 cents, and as it is impossible for the mill to buy middling cotton for less than 33½ cents, Clark's Tables show that after paying commissions, discounts, freight and allowing for waste, there was 5.18 cents left.

As the labor cost on 20-2 is more than 5.18, how does the spinner expect to pay for his power and overhead?

We wonder if the managers of the yarn mills of the South will ever emerge from their jelly fish stage and fight against the forces that are growing rich while sapping the industry?

### Should Encourage Cotton Growing.

LAYING aside entirely the question of an advance or decline in the price of cotton either this season or next season, the matter of an adequate supply of cotton is most serious.

The farmers of the South are now making their plans for the 1924 acreage and every encouragement to plant a large acreage should be given them.

It is not enough to say that "the farmers are going to plant the face of the earth" and let it go at this.

When the farmers planted the 1923 acreage cotton was 31 cents and now it is 33 cents.

The price of 31 cents last year was high compared to the previous season's price of 16 cents and a great effort was made to plant a record acreage.

It is difficult to understand how 33 cents this season should be a so much greater incentive than 31 cents last season.

The States of Georgia, Alabama, Louisiana, Mississippi and Arkansas have had another disastrous season during which many farmers did not get enough cotton to pay for their fertilizer and it is doubtful if they will be very enthusiastic planters this season.

Missouri and Tennessee did not find cotton as profitable as during the previous season and it is doubt-

ful if they will venture further increases.

It will be noted from the table given below that Texas made a record increase in acreage, reaching 14,000,000 acres, and it is doubtful if that State or Oklahoma can increase much more.

North Carolina had a good year and South Carolina made a partial comeback and both States will probably increase their acreage.

It appears probable that Texas and Oklahoma will stand about as last year, while the increase in the Carolinas will probably balance a decrease in the other Southern States.

The following table gives the acreage of the Southern States during the past three years:  
(000 omitted.)

	1921	1922	1923
Virginia	34	55	73
N. Carolina	1,403	1,825	1,678
S. Carolina	2,571	1,912	2,030
Georgia	4,172	3,415	3,433
Florida	65	118	143
Alabama	2,235	2,771	3,149
Mississippi	2,628	3,014	3,298
Louisiana	1,168	1,140	1,395
Texas	10,745	11,874	14,081
Arkansas	2,382	2,799	3,054
Tennessee	634	985	1,167
Missouri	103	198	339
Oklahoma	2,206	2,915	3,295
California	140	202	233
Arizona	90	101	128
Others	18	44	72

United States 30,509 33,036 37,420

During these years we have raised the following crops:

1921	7,960,000
1922	9,720,000
1923	10,081,000

Can we in the face of this record feel secure about a supply of cotton next season?

Maybe we will have 38,000,000 acres with a perfect growing season, little boll weevil damage and raise a big crop.

Such may be the case but in view of the past record such is by no means certain.

Maybe we will have a wet spring and heavy boll weevil damage and only raise 10,000,000 bales.

These are the two extreme possibilities and no matter how much we would like to see a big crop we consider the chances of the 10,000,000-bale crop far outweigh those of the big crop.

Should the crop prove to be another of 10,000,000 the cotton manufacturing world will face a serious proposition.

We are not referring to price but to the question of getting enough cotton to keep the spindles operating.

All last spring and summer there were predictions of a crop of 13,000,000 to 15,000,000 bales but after the weather and the boll weevil finished their work there were only 10,000,000 bales.

There is no use to turn to foreign countries or to consider the promises of the British Empire Cotton Growing Company, for it will be years before they can add much to the supply.

We are making no predictions but believe the cotton manufacturers should be alive to the possibilities and should do all possible to insure a large acreage.



## Personal News

A. F. McIntyre has resigned as agent of the Fulton Bag and Cotton Mills, Atlanta, Ga.

J. I. Alford has been appointed superintendent of the Atlanta (Ga.) Woolen Mills.

Wm. M. Johnson has resigned as superintendent of the Atlanta (Ga.) Woolen Mills.

K. Rush has been appointed overseer spinning of the Bemis Bros. Cotton Mills, Bemis, Tenn.

John Arnold has resigned as overseer carding at the Ensign Mills, Forsyth, Ga.

J. F. Lockett, of St. Pauls, N. C., has become superintendent of the Liberty Cotton Mills, Clayton, N. C.

J. W. Stuart has become overseer of spinning, twisting and winding at the Ensign Mills, Forsyth, Ga.

J. B. Reeves has been elected a director of the Modena Mills, Gastonia, N. C.

David Clark, editor of the Southern Textile Bulletin, has returned to his office after a six weeks' visit to New England.

C. R. Hughes, of Haw River, N. C., has accepted the position of overseer spinning at Cascade Mills, Mooresville, N. C.

C. T. Hughes, formerly of Greenville, has accepted the position of superintendent of the Glenn-Lowry Manufacturing Company, Whitmire, S. C.

R. B. Hunt has been transferred from overseer of spinning and spooling to overseer opening, mixing and carding at the Ensign Mills, Forsyth, Ga.

C. L. Leopard has resigned as night overseer weaving at Steel's Mills, Rockingham, N. C., to become second hand in No. 2 weaving at the Gaffney Manufacturing Company, Gaffney, S. C.

J. D. Watkins has resigned as overseer spinning at the Dixie Spinning Company, Glen Raven, N. C., to become overseer carding and spinning at the Altamahaw Mills, Glen Raven, N. C.

Frank Buchanan has been promoted from second hand to overseer carding at the Dallas Manufacturing Company, Huntsville, Ala., succeeding M. L. Leary, who died recently.

D. C. Jones, who has been with Alexander & Garsed, Southern representatives of the Crompton & Knowles Loom Works, has been appointed superintendent of the Judson Mills, Greenville.

Lawrence R. Brumby has been appointed assistant general manager of the three plants of the Bibb Manufacturing Company here. He was formerly assistant superintendent of the Osprey Mill No. 1.

S. C. Simmons, who recently resigned as active vice-president of the Cannon Manufacturing Company at Concord and Kannapolis, has accepted a position with the Hunter Manufacturing and Commission Company, New York.

### J. H. Chaplin on English Visit.

J. H. Chaplin, vice-president and director of sales of the Root Company, Bristol, Conn., has just sailed for England. Mr. Chaplin has gone to England to look after the details of some large installations of Root automatic counters for some of England's most prominent textile mills. While in England he will make a close study of the particular methods used in that country. The Root Company are manufacturers of a complete line of small instruments, automatic in action, that will correctly record the production of every article, machine or hand-made—whether wrapped, packed, conveyed, shipped, measured, grown, sold, bought, weighed, alive, dead or inanimate in any industry. They register revolutions or strokes of pumps, engines, dynamos, shafts, turnstiles, etc.

Mr. Chaplin's visit to England means further acknowledgement of the merit of American ingenuity by foreign buyers.

### J. D. Massey Dead.

Columbus, Ga.—Following an illness of two days, J. D. Massey, vice-president of the Eagle and Phenix Mills, died at his home here Friday night at the age of 50 years.

He was president of the City School Board and a director in the Third National Bank, and the Columbus Savings Bank and Trust Company and associated with the Perkins Hosiery Mills. He was prominent in the affairs of the cotton manufacturers of this section and of the country.

Mr. Massey was born in Oconee county, South Carolina, December 14, 1873. He made his way through a commercial college and in 1894 was elected secretary of the State Railway Commission of Georgia. In 1902 he was elected treasurer of the Eagle and Phenix Mills and in 1916 he became vice-president. He became acquainted with G. Gumby Jordan while he was secretary of the railroad commission. Mr. Jordan, who was then president of the Eagle and Phenix Mills, became impressed with Mr. Massey and he was offered the position of treasurer. He became vice-president of the Eagle and Phenix upon Mr. Jordan's retirement and W. C. Bradley's election as president.

Mr. Massey had been a member of the city school board since 1907 and its president for the past two years. He had an active part in the success of the Industrial High School here, in which he first adopted the idea of vocational training both for boys and girls. He was never married.

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**HAMPTON SMITH**  
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Nickel-Plated  
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Improved  
Loom Reeds  
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Lease Reeds  
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# MILL NEWS ITEMS OF INTEREST

**Chattanooga, Tenn.**—The Davenport Hosiery Mills will erect an addition to cost \$20,000.

**Reidsville, N. C.**—The Edna Cotton Mills have increased their capital stock from \$500,000 to \$1,000,000.

**Memphis, Tenn.**—The All-Silk Hosiery Mills, capital stock \$10,000, have been incorporated by B. J. Tobery and others.

**Balfour, N. C.**—The Balfour Cotton Mills have awarded contract to the Bahnson Company, Winston-Salem, N. C., for the humdriifying equipment in the new mill they are erecting here.

**High Point, N. C.**—The Piedmont Mills and the Highland Cotton Mills, both of which were recently reported as planning enlargement, will not erect any additional buildings at this time.

**Lancaster, S. C.**—Contract for the erection of a three-story weave room at the Lancaster Cotton Mills has been awarded to Potter & Shackelford, of Greenville. The building, which is to be 104x180 feet, will cost between \$70,000 and \$75,000.

**Hemp, N. C.**—The County Moore Mills have retained Lockwood, Greene & Co. to design their buildings and village for the new mill which they will build here. As recently noted, the plant will have 250 looms for manufacturing fine shirting. W. W. Cowgill, of Pinehurst, is president of the company.

**Cramerton, N. C.**—The new weave mill of the Cramerton Mills, known as the Mayflower Mills, Inc., is expected to begin operations in May. The plant will weave fancy dress goods and will be fully equipped for dyeing, bleaching and finishing. The construction work includes new cottages to accommodate 250 families.

**Greenwood, S. C.**—At a meeting the following directors of the Panola Mills were elected: Kenneth Baker, G. P. Neel, G. P. Sloan, J. E. Thompson, J. R. Abney, J. E. Burnside, John B. Sloan, A. S. Hartzog and J. P. Abney.

Officers of the mill are: J. P. Abney, president and treasurer; Kenneth Baker, vice-president; J. E. Burnside, secretary, and J. R. Abney, assistant treasurer.

**Laurens, S. C.**—The Laurens Cotton Mills, of this place, of which Senator N. B. Dial is president, are installing 12 additional spinning frames and some carding machinery. They will be in operation within a comparatively short time. Eighteen houses for employes are also being built to care for the additional help which will be needed. The Laurens Cotton Mills are operating full time during the day but have no night work.

**Clayton, N. C.**—The Liberty Mill is installing 5,000 additional spindles and will erect several new houses in the village. J. P. Lockey, formerly of St. Pauls, N. C., is now superintendent of the Liberty Mills.

**Ennis, Tex.**—Plans for erecting a hosiery mill here to have a capacity of about 100 dozen pairs of hose per day, are under way here, the Chamber of Commerce and other organizations having taken the initial steps toward organizing the company.

**Central Falls, S. C.**—C. J. Cox has resigned as vice-president and director of the Pennsylvania Yarn Mills, Inc., and sold his interest to the Pennsylvania Textile Mills, which gives the latter concern control of the plant, which was formerly the Central Falls Mill. The mill will be managed by W. D. McNeil, of Fayetteville.

**Tallasse, Ala.**—It is reported that the Tallasse Mills are having plans prepared by J. E. Sirrine & Co., of Greenville, for an addition to their mill to accommodate 30,000 additional spindles.

**Nashville, Tenn.**—Plans for the early construction of the \$4,000,000 fibre silk plant at Hadley Bend, near here, were discussed at a meeting here of officials of the Dupont interests, who will build the plant.

**Forest City, N. C.**—Parsley & Tanner, Inc., operating a knitting mill here and a finishing plant at Spindale, have been reorganized under the name of the Forest City Hosiery Company. The finishing equipment at the Spindale plant has been moved into the knitting mill here. Chas. L. Okey, of Charlotte, is president of the reorganized company, which is capitalized at \$225,000. J. S. Thomas is treasurer; S. E. Elmore, secretary.

**Tallapoosa, Ga.**—At the annual meeting of the stockholders of the Tallapoosa Mills, the same board of directors were re-elected and the name of W. C. Ballard, of Boston, Mass., was added.

The mill has enjoyed a prosperous year under the management of Arthur T. Bradlee, chairman of the board, and the local management of C. E. Pearce, agent, and R. L. McMahon, secretary, treasurer and buyer.

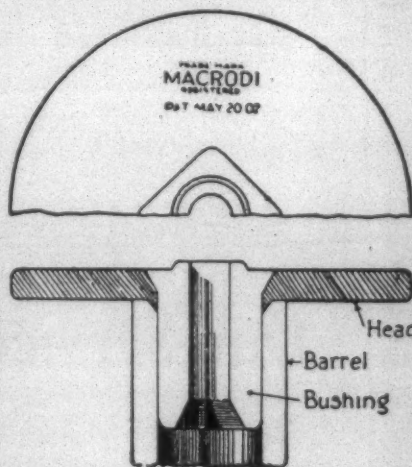
Immediately following the meeting, the out-of-town officials and members of the board were entertained at a luncheon at the residence of C. E. Pearce.

**Amarillo, Tex.**—Business men are showing much interest in the proposal to establish a cotton mill here. The West Texas Chamber of Commerce has a proposition for the organization of a company in Amarillo with capital stock of \$500,000 for establishing a mill with at least 15,000 spindles. Rudy Copeland, of Fort Worth, a representative of the West Texas Chamber of Commerce, will be here in a few days and present the matter in concrete form. It is believed that the proposition will be accepted. Considerable cotton was planted on the plains about Amarillo last year, and it is believed the acreage will be considerably increased this year.

**Houston, Tex.**—Under the auspices of the Houston Chamber of Commerce, a committee has been appointed to lay plans for the financing of a new cotton mill here. Roy M. Farrar, a prominent local business man, is the chairman of this committee. It is proposed that the cotton mill will have a capital of \$250,000, as previously stated in these columns. Mr. Farrar, however, has not yet indicated what his program will be as to securing the subscriptions for the capital stock. C. S. E. Holland, president of the Chamber of Commerce, was recently quoted here as stating that the money "will be raised by February 1." Mr. Holland states that he was misquoted, for as yet not one dollar has been subscribed.

**Spartanburg, S. C.**—The annual stockholders' meeting of the Skyland Hosiery Company, at East Flat Rock, N. C., was held with M. G. Starrett, of New York, president of the company, presiding. Officers of the company were re-elected for another year as follows: M. G. Starrett, president; L. B. Stillwell, vice-president; E. H. Wells, treasurer, and C. P. Rogers, general manager.

The Skyland Hosiery Company during the past year manufactured and marketed a total of approximately 2,500,000 pairs of men's half hose, of cotton, mercerized and silk yarns, the product of the company going to all parts of the United States, Canada, Cuba, India and South America.



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**Anderson, S. C.**—Curtailment of operations by the Anderson Cotton Mills, and which will remain in force for the time being, will become effective this week, it is said. Present market conditions were assigned as the cause making it necessary to curtail operations temporarily.

Under the program of curtailment as was announced, beginning Monday, February 11, the Anderson Mills will operate during the first four days of the week, suspending operations Friday and Saturday.

Beginning during the following mills will operate during the first week of Monday, February 18, the three days of the week, suspending under the program, during the days of Thursday, Friday and Saturday.

It was stated authoritatively that this program of three days each week of operation will continue until such changes occur in present market conditions as would warrant resumption of the full time program.

The curtailment program, of course, relates to night shifts, it being recalled that the Anderson Mills are operating night and day at the present time.

It is understood that the other mills of the county will adopt a program of curtailment next week, their reasons being also due to market conditions at present.

#### Ragan Knitting Company Files Suit Against Its Former President.

High Point, N. C.—Suit for \$428,084 has been started in Greensboro by the Ragan Knitting Company, of Thomasville, N. C., against J. H. Adams, of High Point, N. C., the complaint of the plaintiffs being filed in the office of the clerk of Guilford County Superior Court.

Sale of machinery said to have been antiquated and badly worn to the Ragan Company is one of the causes of the action, it is alleged. In 1918, according to the complaint, Mr. Adams interested, among others, R. R. Ragan in the manufacture of cotton yarns into women's and children's hosiery, and the Ragan Knitting Company was organized.

Mr. Adams is said to have assumed the position of president of the company at the organization, a position he held until some time after April 6, 1920. On April 16, 1920, it is alleged that Mr. Adams prepared a contract between the Ragan Company and the Highland Cotton Mills, of High Point, with reference to the purchase of necessary yarns by the plaintiff company, which Mr. Ragan as manager of the Ragan company

there was a decline in the market value of the Ragan products, it is asserted, so that the Ragan Company lost \$70,000.

The contract, or agreement, it is stated, made such a condition that Mr. Adams was trading with himself, making it possible for the Highland Mills to sell in advance a large quantity of yarns and at an excessive price. As selling agent for the Ragan Company, Mr. Adams did not sell the output of the concern at a profit, it is complained, as he had contracted to do. In the meantime

there was a decline in the market value of the Ragan products, it is asserted, so that the Ragan Company lost \$70,000.

The second cause of action named in the complaint arises over the alleged sale of the machinery of the Kernersville, N. C., Knitting Company, controlled by Mr. Adams, to the Ragan Company, it being further asserted that the machinery was old and worn, having previously been used by the High Point Hosiery

Mills, the Piedmont Mills and Piedmont Mills No. 2, all at High Point. Forty ribbers and 42 knitters comprised the equipment, which, it is contended, had not been profitably used in the Kernersville Mill. The plaintiff asserts that the ribbers were worth about \$100 each, and the knitters about \$5 each, but were sold by Mr. Adams to the Ragan Company for \$500 each. A loss of about \$14,000 in that way to the Ragan Company is claimed by the plaintiff.

Reduced earning power on account of the old machinery amounted to \$43,100, it is claimed by the plaintiff. The Ragan Company claims that it was forced to abandon the old machinery and purchase new. Of the total amount sued for, \$59,084 is the difference in value of the machinery traded and the loss in production, while \$870,000 is sought because of the alleged fraudulent conduct of the defendant.

#### Hardeman is Elected Head Industrial Club.

The Industrial Club of the Newberry Cotton Mills, Newberry, S. C., held a first meeting at the West End boarding house on Saturday night. The occasion was enjoyed very much and about 65 members were present. Addresses were delivered by Z. F. Wright, president of the "Lion Fellowship," and by J. Marion Davis, superintendent of the mill, on the "Aim of Our Club."

The election of officers resulted as follows: W. H. Hardeman, president; F. K. Jones, vice-president; H. G. Alewine, secretary. The inauguration address was made by W. H. Hardeman.

#### Gainesville Cotton Mills. Gainesville, Ga.

43,008 spinning spindles; 1,220 looms.  
J. A. Sorrells ..... Supt.  
Mike Elliott ..... Carder  
Geo. H. Graham ..... Spinner  
Jas. H. Henderson ..... Weaver  
A. C. Jones ..... Cloth Room  
R. C. Jubin ..... Electrical Eng.  
R. K. Martin ..... Master Mechanic  
W. B. Nance  
Outside Foreman and Shipping Clerk.

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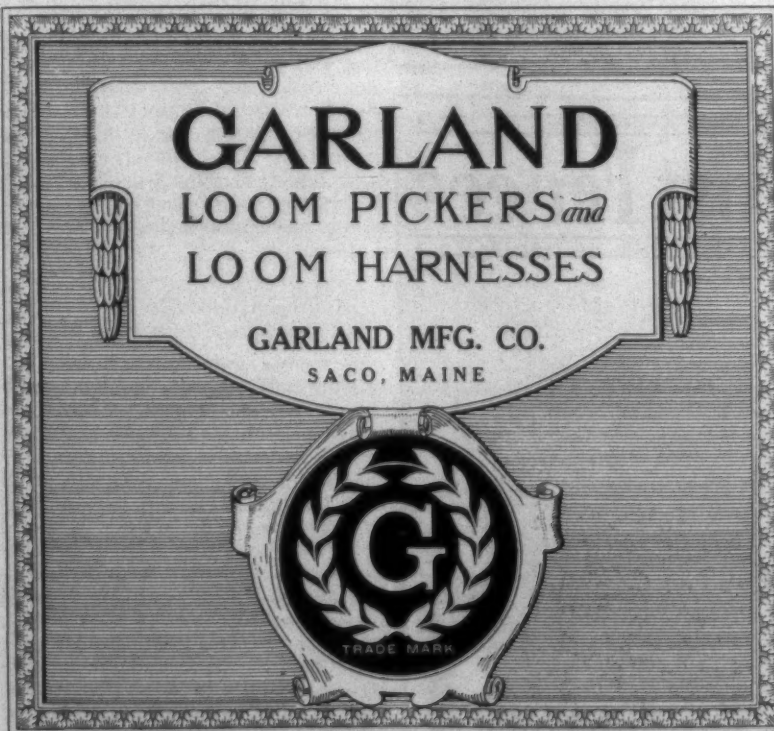
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*Sales Agents in Other Cities*

### Selecting the Motor— (Continued from Page 22a)

Speed regulation of a series motor may be obtained by insertion of resistance in the circuit but with considerable loss of efficiency.

Compound motors combine the characteristics of both shunt and field motors and while they do not have the pronounced characteristics of either they make a better all-around motor if that is what is desired.

Most compound motors are cumulative, that is, the shunt winding and the series winding both work in the same direction. Some are made differential, however, and are used for particular purposes. In these the fields are operative against each other. The cumulative motor will combine a fairly high starting torque with a fairly constant operating speed, thus embodying the desirable feature of both the shunt and series motors. These characteristics will not be as pronounced, however, as those of a pure type motor. Of course the compound motor may be lightly or heavily compounded according to the service which is desired of it and as to whether high initial torque or constant speed operation under varying load is desired. A light compounding with a weak series field will develop high starting torque and will maintain fairly constant speed if not put to severe load conditions. A heavily compounded machine will not give as high a starting torque but will yield rapid acceleration under full load and will maintain nearly constant speed under load changes. These characteristics may be readily fitted into the needs in any industry. The process of doing so will be an interesting and a valuable one combined. — Fibre and Fabric.

### Hydrogen Peroxide Bleaching. (Continued from Page 24)

amount of acid to render it stable in transit and up to the time of use, when the liberated oxygen is required to do the bleaching.

Stability is not the peculiar property of any particular strength of hydrogen peroxide. Weak solutions of hydrogen peroxide are just as stable as the higher strengths. Certain metals and salts of these metals act as catalysts and liberate oxygen. Iron, manganese and copper are such metals; they and their salts are harmful to hydrogen peroxide, rendering it unstable. Traces of these substances cause undue losses of oxygen and the peroxide should be free from these injurious substances.

The two graphs show the effect of copper and iron sulphate on a one volume bath of 100 F. over a period of three hours. You will observe that in the case of the iron salt the bath of 500 c.c. of one volume hydrogen peroxide has lost all its oxygen in three hours with the addition of ½ gram of iron sulphate. In the bath with the copper salt the loss with ½ gram was two-thirds the oxygen in the same time. With increased quantities of these salts the loss is greater, hence the importance of keeping these impurities

out of the hydrogen peroxide and your bleaching baths.

Originally hydrogen peroxide was not used to a great extent for bleaching, but mainly medicinally as an antiseptic and sterilizer, for which purpose it is admirable, the pure oxygen doing its beneficial work and leaving water behind.

### Hyatt Roller Bearing Company Establish Charlotte Office.

J. M. Hancock, of the Hyatt Roller Bearing Company, has moved to Charlotte, N. C., and will be their Southern representative.

Mr. Hancock has been with the Hyatt Roller Bearing Company for a number of years and is an expert on transmission.

He has not yet located suitable offices but expects to do so at an early date.

### Firemen's Mutual Insurance Co. Open Charlotte Office.

The Firemen's Mutual Insurance Company, of Providence, R. I., has opened a Southern office in Charlotte with G. H. Stewart as Southern manager. They formerly did a large business with Southern mills, but on account of certain legislation partially retired from this field.

They expect to again become a very active factor in cotton mill insurance.

### P. E. Glenn's Father Buried in Carlton.

Funeral services for F. G. Glenn, 81, prominent citizen of Carlton, Ga., father of P. E. Glenn, secretary of the Exposition Cotton Mills, Atlanta, who died at his home, according to word received here by relatives, were held Friday in Carlton. His death was attributed to pneumonia.

Mr. Glenn leaves his wife, six sons, P. E., A. C., T. E. Glenn, of Atlanta; S. C. Glenn, of Rochelle; W. M. Glenn, of Greenville, S. C., and J. A. Glenn, of Carlton.

### To Increase Hours for Swiss Labor to 52.

Berne, Switzerland. — The Swiss Government has concluded that working hours in Switzerland must be increased from 48 weekly, the schedule under the present law, to 52, and a national plebiscite on the question will be taken on February 17.

Meanwhile, the government has permitted the Fischer Steel Works at Staffhausen to increase the hours of 2,200 men to 52 weekly. The workers threatened to strike, but abandoned their position when informed that the extension of time was necessary if the plant was to compete with the world's steel market.

### Riding Market to Death.

The buying, and by this we refer mainly to the retailer, has ridden the market almost to the death point and evidently means to continue this policy, blind to the fact that any market driven completely out of range, will, sooner or later in



some way of its own, find the means of springing back to the disadvantage of the buyer.

Outside of textiles, what a difference! How can the picture painted by the automobile, building, steel and iron, and railroad industries be so bright and the textile industries so gloomy? If theirs is the true picture and being the majority of important business lines, seems to warrant this, how can our picture of decreasing production and dwindling consumption last against theirs of increasing production, improving demand, and record breaking freight movement?—Market letter of Hunter Manufacturing and Commission Company.

#### J. L. Grice Dead.

Shelby, N. C.—J. L. Grice, prominent cotton mill superintendent and one of Shelby's most esteemed citizens, died Tuesday afternoon at 4 o'clock. He had been suffering for about four months with high blood pressure and heart trouble.

Mr. Grice was born and reared in Lincoln county, where he embarked in the cotton mill business, his first connection with mill interests being with the Elm Grove Cotton Mills, near Lincolnton, N. C. From here he went to Clover, S. C., and for a number of years was an official of the Clover Cotton Mills. About sixteen years ago Mr. Grice moved to Shelby, where he was superintendent of the Belmont Cotton Mills until a year ago, when he went to Bessemer City as superintendent of the George Cotton Mills. The home in Shelby was maintained by Mr. Grice and he came back there when his health began to fail.

Mr. Grice was generally liked by his employees, who had the highest respect for him. He was a member of the First Baptist church at Shelby, also a member of the Masonic fraternity, Junior Order and the Woodmen of the World.

The funeral was conducted from the residence, 411 South LaFayette street, Thursday morning at 10 o'clock with Masonic honors, Rev. R. L. Lemons and Rev. John W. Suttle conducting the services.

Surviving the deceased are Mrs. J. L. Grice, two sons, O. L. Grice, of Lenoir, and James Grice, a student of Shelby High School; Misses Mammie, Flossie and Eva Grice, and Mrs. C. Rush Hamrick, of Shelby; Mrs. J. W. Allen, of Wilmington, and Mrs. F. C. Bordeaux, of Gastonia, also seven grandchildren.

#### Our Cotton Monopoly in Danger.

Boston.—L. K. Salsbury, president of the Delta & Pine Land Co., of Mississippi, the largest cotton plantation in the world, says to the Boston News Bureau: "I do not think 37.70 cents a pound (the high to date) will be the high for cotton futures for this crop. I expect cotton will sell for at least 40 cents a pound and probably higher.

"No new method for controlling the boll weevil has been developed this winter and there is no promise of any in sight beyond the use of calcium arsenate, which does the work if properly applied. To apply it properly it is necessary to have a

thorough organization which most cotton raisers lack. Furthermore a large part of the belt—the hill country—does not have sufficient dews to use the poison successfully. It is a certainty we cannot raise a large crop of cotton until the boll weevil problem is solved. I seriously doubt a crop above 10,000,000 or 11,000,000 bales for the next five years.

"I cannot see anything that will reduce the cotton basis below 30 cents. I think for the next five years we will be compelled to figure on 30-cent cotton with the large swings in the market at times going to 40 cents or maybe 45 cents and again to as low as 25 cents for a brief spell.

"The spinner must abandon the idea of 18-cent cotton and make his plans on a 30-cent basis and instead of trying to educate the people that he cannot make money out of 30-cent cotton, spend his time and money in educating them that they cannot buy goods on any basis lower than 30 cents.

"America has controlled the one great agricultural product that the whole world pays tribute to, but if one will study statistics he will find that this great monopoly is slipping away. Several years ago we produced 68 per cent of all the cotton raised in the world and last year we produced only 53 per cent. If conditions continue as I see them it will be only a few years before we will have lost our commanding position."—Boston News Bureau.

#### Increased Demand for Mill Stocks.

Southern cotton mill shares remained quiet during the past week with a slightly increased demand for preferred stocks, according to the weekly review of Southern mill shares prepared by R. S. Dickson & Co., Gastonia, N. C. The first preferred shares of the Union-Buffalo Mills, the Woodside, Easley and Judson and the first and second preferred shares of the Watts Mills were in demand, but no advance in the bid prices was noted.

Victor-Monaghan common, the most active of Southern mill stocks, has shown a gradual decline since the beginning of the year. On January 1 quotations were around 125 from which it has since declined to around the present bid of 120 with very little trading. Woodside common which sold at 130 a few weeks ago is now bid at 125 with offerings at 128. Sales of the Poe Manufacturing Company and the Brogon Mills have held well in price considering the general decline in practically all other common stocks for the past few weeks, Brogon being in demand at 117 and Poe at 140. Both are firmly held at these figures.

The general list of preferred issues have held extremely well due to the abundance of funds for investment throughout the South. The majority of these issues yield very attractive interest returns at present quotations. Very few inquiries are being received by the mills for their products at this time and goods are being stored in many cases. However, very little curtailment has taken place and most plants are operating at full time.

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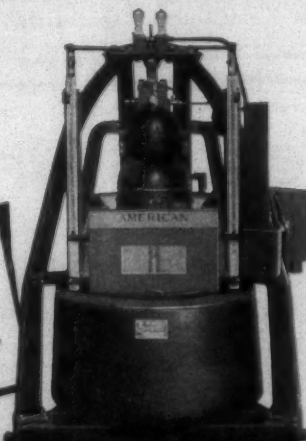
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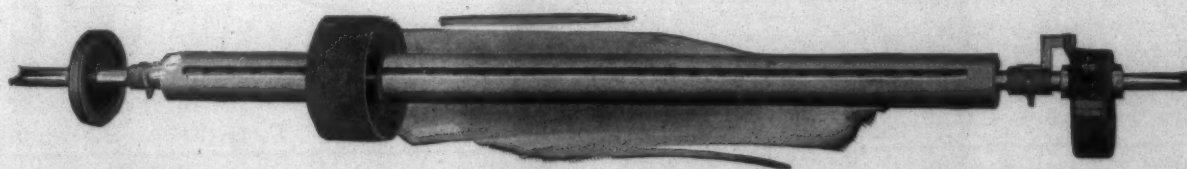
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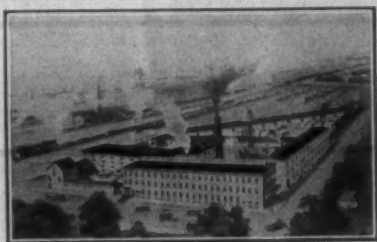
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## U. S. Dye Trade Increasing

THERE were 2,631,341 pounds of dyes imported during 1923, with an invoice value of \$2,718,124, as compared with 3,982,631 pounds valued at \$5,243,257 imported during 1922, according to a statement made public by the chemical division, Department of Commerce, at Washington. This shows a considerable decrease in imports for 1923. The figures are not entirely comparable, but are within a slight percentage of being correct, according to government experts.

The division also made public the imports for January through the ports of New York, which totalled 228,743 pounds, with an invoice value of \$232,571. This represents an increase over the imports of December, 1923, when they totalled \$202,704 pounds, valued at \$212,851.

The statement of the division, which is very comprehensive, contains a comparison of the dyes in each class, showing the quantity of imports during 1923, together with their corresponding imports for 1922, 1921, and the pre-war year 1919. It is believed by the government officials that the imports through the port of New York, which are given, comprise 90 per cent of the total imports of dyes into the United States.

The statement points out the leading dyes of foreign origin used by the domestic textile and dye consuming industry. Of the 66 dyes shown, totalling 1,617,052 pounds, seven were imported in excess of 50,000 pounds each, and 27 in excess of 20,000 pounds.

The total imports for the 14 leading dyes exceeded 700,000 pounds. Twenty-two of the 66 dyes were of Swiss manufacture, and 31 per cent of the quantity came from that country, while practically the entire remainder were manufactured in Germany. It is shown that the vat dyes lead in the quantity of imports. In part, the division reports:

"An examination of the import figures for the year prior to 1923 reveals the recent increased consumption of faster dyes, and the demand for certain new types which possess special advantages, such as economy of application or fastness.

"The reduced imports in recent years compared with those of 1914, is in most cases due to the increased domestic production. An increased import in recent years compared with the pre-war points out in many cases a trend of greater consumption even over and above the domestic demand."

"In a study of the import data for a particular type, it is highly important to consider the relationships with other similar colors. This is illustrated in the case of indanthrene blue G. C. D., the most important vat dye other than indigo. Here we have a pre-war import in 1914 of 478,985 pounds, and an import of 68,537 pounds in 1923. The reduced import of 201,835 pounds in 1921 is due in part to the increased domestic production. In 1922, however, the imports receded to 16,802 pounds.

"This is due not alone to a 200 per cent increase in the domestic production for that year, but also

to the importation of 239,085 pounds of indanthrene blue B. C. S. The latter is similar to indanthrene blue G. C. D., possessing, however, greater fastness to chlorine, and was substituted to a considerable extent for the G. C. D. brand in the cotton dyeing industry.

"In 1923 the imports of B. C. S. fell to 12,240 pounds. The B. C. S. brand was produced in quantity in the United States in 1922. It is further probable that the large import of B. C. S. in 1922 was partly carried over to 1923, and that the combined production and importation of the B. C. S. brand directly influenced the imports, as well as the production of G. C. D. in 1922.

"The imports of the G. C. D. receded from 201,835 pounds in 1921 to 16,802 pounds in 1922. In 1923, however, imports of the G. C. D. increased to 68,537 pounds. Of the total imports of indanthrene blue G. C. D. through the port of New York during 1923, 16 per cent came from Italy, and 10 per cent of all dyes imported were shipped from that country. The significance of this can be more readily appreciated by a brief review of the Reparations dye deliveries.

"From the 50 per cent stocks on hand in the German dye plants as of August 15, 1919 (totalling 10,761,361 kilos), subject to the Reparations Commission's option, 5,200 tons were withdrawn for immediate delivery. Of these Italy received 700 tons, while the United States and Great Britain received each, 1,500 tons; France, 1,000, and Belgium, 500 tons.

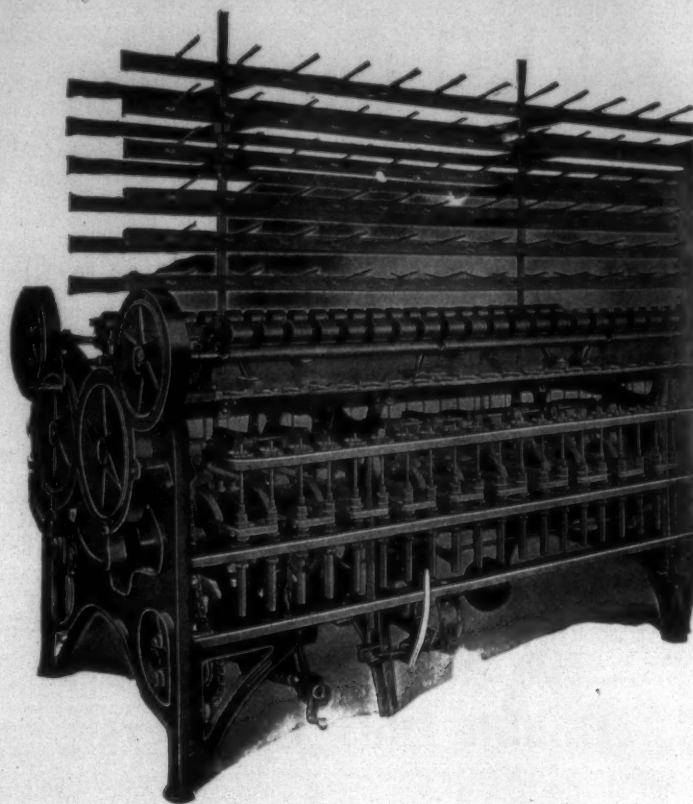
"The remainder of the stock was distributed on the basis of the pre-war consumption, modified to take into account new conditions and home production. Italy received 7 per cent of the other vat dyes, compared with 39 per cent for the United States. The total dye deliveries from the stocks on hand to the Allied and Associated Governments were 9,889,650 kilos.

"During the period of the United States' participation, the option for the delivery of 25 per cent of the German daily production accorded G. C. D. blue to Italy, and only 9 per cent of the other vat dyes, while the United States received 60 per cent of G. C. D. blue, and 42 per cent of other vats.

"After the cessation of the deliveries to the United States, the percentages accorded to Italy, France, and Belgium showed a conspicuous increase. For the other vat dyes, Italy and France each received 20 per cent; Belgium 10 per cent, and Great Britain 50 per cent.

"According to the report of the Reparations Commission, Italy received up to 1922, 4,241,832 kilos of all dyes out of a total delivery by Germany of 22,689,775 kilos. Italy ranked second to Great Britain, the latter receiving 6,159,583 kilos of all dyes.

The Reparations figures are of interest in a consideration of the possible imports of reparations dyes from Italy and France during 1924, in view of the renewed deliveries of the I. G. to the different allied countries."



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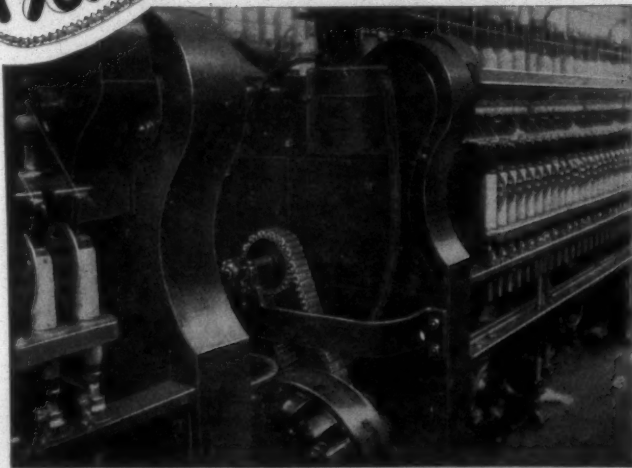
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### The European Textile Situation Reviewed for 1923

(Continued from Page 14)

cloth; spinners experienced difficulty in adjusting their quotations to those of raw cotton; and the advance in the price of manufactured products, as compared with the rise of cotton, did not leave an adequate profit to weavers.

The number of idle spindles during the year just past was relatively low, the stoppage of machines being due principally to lack of labor, manufacturers having preferred to keep their plants going and to accept lower returns. The French cotton industry should normally export more than 30 per cent of its production, but in 1922 its foreign sales were 22 per cent below those of 1913, due chiefly to reduced shipments to Germany. The value of cotton yarn exports in the first ten months of 1923 reached 148,808,000 francs, a decrease of over 50,000,000 francs from the total for the corresponding period of 1922. On a weight basis, exports of cotton cloth during the first ten months of 1923 were approximately 75 per cent of 1913. The disturbed condition of the industry, resulting from anxiety regarding the supplies and price of raw cotton, has stimulated it to greater activity in the search for foreign outlets for French cotton manufacturers, and efforts in this direction are likely to increase in 1924.

### French Silk Market Hesitant.

French silk manufacturers had a troubled year in 1923, although the trade seems to have been fairly good. The high prices of raw silk have rendered the market for that product hesitant during much of the past year. Domestic production of fresh cocoons rose from 2,584,546 kilos in 1922 to 3,129,547 in 1923. Silk conditionings at Lyon, however, showed a decided drop, while exports of silk fabrics in 1923 were much higher than during preceding years. The competition furnished by artificial silk led silk manufacturers to produce mixtures of silk and artificial silk, as well as of cotton and wool with silk. This tendency will probably continue into 1924.—Assistant Commercial Attache J. F. Butler, Paris, December 29.

### Austrian Spinners and Weavers

#### Uncertain as to Future

The Austrian cotton industry at present is operating at 60 to 75 per cent of capacity. Since the recent fluctuations in the price of raw cotton, Austrian spinners and weavers have been uncertain as to the future, and the industry, more than ever, exists from hand to mouth. Of the many factors which will determine the condition of the Austrian textile industry and trade during 1924 it is certain that the trend of political and economic affairs in Europe, and the price of raw cotton, will be by far the most important.

The partition of the former Austro-Hungarian monarchy into the Austrian Republic and the various succession States has left the Austrian textile industry in a poorly balanced condition, Austria having received about 20 per cent of the spindles and only about 10 per cent of the looms or approximately 13,000. Present spindleage is estimated

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at 1,100,000. Conditions were reversed in Czechoslovakia.

Austria is attempting to secure a suitable outlet for its textile products by negotiating commercial treaties with the succession and Balkan States and these are now under consideration. In this manner it hopes to adjust industry and trade to meet domestic needs and to increase exports of lines in which there is now an adverse balance. Among the goods at present over-produced are yarns, knit wearing apparel, laces, curtains, prints, bleached and dyed goods, shoddy felt cloth, blankets, carpets, jute and hemp fabrics. On the other hand, Austria is forced to import cotton and wool cloths, hosiery, knitting yarns, linen, and silks, and such purchases largely account for the unfavorable balance in textile foreign trade.

### Czechoslovak Outlook Generally Optimistic.

Owing to an improved demand for yarn, both for the domestic and foreign trade, Czechoslovak cotton spinning mills are at present operating at close to a normal scale. Cotton weaving mills are less satisfactorily occupied, working on approximately a 65 per cent basis, but even these showed an improvement of 100 per cent in the past year. Somewhat the same condition exists in the wool industry, where the spinning mills are more satisfactorily occupied than the weaving mills. In both branches the outlook for the coming months is improved by the fact that stocks on hand of finished goods, as well as of raw materials, are relatively small, putting the mills in a favorable position to accommodate themselves to changes in world markets both for raw and finished materials. In the textile industry emphasis is being laid on the markets in the succession States, in the Balkans, and the Near East, where the slowly improving economic conditions are expected to permit increased business.

During 1923 the Czechoslovak linen mills were running on approximately a 20 per cent basis, and the outlook for 1924 is not conspicuously better. The high price of flax and yarn and high operating costs in Czechoslovakia, as compared with those of its foreign competitors apparently are responsible for the depression in the linen industry.—Acting Commercial Attache H. Lawrence Groves, Prague, December 28.

### Polish Textile Production Restricted

At present Polish textile mills are operating on a two-day-a-week basis, and no early improvement can be expected. The outlook for 1924 is for a production considerably restricted, compared with that of the previous two years, with reduced imports of American cotton.—Cable from Acting Commercial Attache Leighton W. Rogers, Warsaw, January 30.

### Italian Textile Activities Below Normal.

Italian stocks of American cotton are generally low, with mill stocks of Indian and Egyptian above normal. Very few spinners enjoy the advantage of having bought cotton cheaply, and only about half of February have, as yet, been booked. Their requirements for January and Domestic stocks of cotton goods are

low. While higher prices for finished goods may curtail sales to a certain extent, it is felt that they cannot fall much below present levels, as purchases have been limited to the strictly necessary supplies. The export business, which supports 30 per cent of Italy's cotton industry, shows satisfactory progress, and no decrease in this demand at present is anticipated.

The wool situation is somewhat similar to that of the cotton industry. Mill stocks of wool are rather low and weavers are requesting prompt deliveries of worsted yarns, while wholesalers are cautious. The demand for woollens and worsteds for the summer trade is stunted, and retail business is slow.

The silk market is inert, with a downward price tendency, and dealings are on a hand-to-mouth basis. Domestic consumption is meager, and the foreign demand for Italian silks is restrained.

While activity in the Italian textile industry is below normal, no further decline is anticipated, the manufacturers are strong financially, and, despite uncertainties, there is an optimistic feeling with regard to the future.—Assistant Trade Commissioner J. Allen Palmer, Rome, December 22.)

### Spanish Market Invaded by British Textiles.

The Spanish cotton industry is dependent upon American cotton for about 80 per cent of its consumption, the remainder coming chiefly from Africa and India. At the present time textile conditions are very unfavorable, as a result of the dumping of about 40,000,000 pesetas (1 peseta=\$0.13 at current exchange) worth of British cotton piece goods in Spain during the last eight months. British salesmen are still taking large orders for grey (unbleached) and white (bleached) cotton cloths, and especially for shirtings, drills, and prints. In fact, the Spanish textile market today appears to be more British than Spanish, and the major part of the stocks of the best dry goods stores in Madrid and Barcelona is of British origin, the consumption of Spanish textiles being largely confined to the middle and poorer classes.

The wool textile industry in Spain has plenty of raw material within the country, and during the past two years has made several important shipments of Spanish wool yarn to the United States.

Spain is protected from American textiles by a high tariff, but, as conditions now stand, there seem to be possibilities of selling American artificial silk yarn and silk hosiery.—Commercial Attache Charles H. Cunningham, Madrid, January 4.

### Belgian Textile Position Strong.

Flemish textile industries, generally, closed 1923 with the best outlook of any Belgian industrial branch, their position being strengthened by low wages. Foreign buying of Belgian flax yarns, emanating chiefly from the United Kingdom, the Netherlands, and Italy, is expected to maintain its present activity and spinners are booked well into the spring. Export demand for Belgian handkerchief, table, household and dress linens has generally brought linen mills to the point where they are practically fully booked for the



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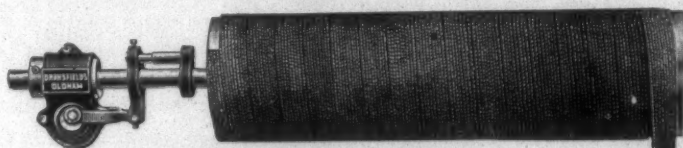
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first six months of 1924, so that the domestic market has experienced some difficulty in placing orders for early delivery.

Belgian cotton spinners should continue to do a brisk business during the early months of 1924 owing to the fact that local weavers have generally bought only in small quantities, and are not covered for their winter contracts. The main export fields of Belgian cotton spinners now are Great Britain, France, The Netherlands, Chile, and Argentina. The removal of German yarn import restrictions cannot but help this branch of the cotton industry. The foreign demand for Belgian prints, shirtings, drills, and oxfords is sufficient to maintain capacity operation until spring.—Acting Commercial Attache S. H. Cross, Brussels.

#### Netherlands Textiles Losing Export Market.

The position of the Dutch textile industry in 1923 became increasingly difficult as the year progressed. While German competition has slackened, the pressure of low priced Belgian cotton products on Dutch sales has been severe, since these manufacturers are actively pushed in markets like China, British India, Egypt, and South America, where Dutch products were formerly sold. There is undoubtedly considerable purchasing of cotton goods in Belgium by commission houses, for shipment to the Dutch East Indies. Efforts to reduce wages and to increase working hours have resulted in a lockout affecting 39 plants of the Dutch cotton industry. This lockout from the manufacturers' standpoint is fortunate in so far as it permits disposing of the relatively large fabric stocks accumulated during 1923, especially as it comes at a time when an improved demand is reported from South America, the Indies, and China. However, practically no cotton mills will show profits for 1923, but the situation in the wool mills is more favorable despite sharp competition from low exchange countries.—Acting Commercial Attache S. H. Cross, The Hague.

#### Scandinavian Industry Faces German and French Competition.

The general demand for textiles in the Scandinavian markets increased during 1923, but, owing to continued German competition, and to the violent fluctuations of the Danish and Norwegian currencies, the share of the United States in this growing volume of textile trade was not what it was generally expected to be. The end of the year revealed a new form of German penetration in the establishment of direct selling agencies for German products in Denmark. In addition to the price-cutting tendencies of such agencies, many German textile manufacturers are selling goods at approximately the prices offered by Scandinavian merchants.

French competition is also becoming serious, and considerable quantities of bleached goods and shirtings, said to be of excellent quality and eminently suitable for the Danish demand, have appeared on this market. High production costs have thus far kept imports of textiles from Czechoslovakia at a low point

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although many offers are being received, and there are indications that Czechoslovakia may gain a foothold in Denmark during 1924, especially in linens, to the detriment of England. Offers of sailcloth are being received from Russia, Belgium, and the Netherlands, but it is not thought that these will seriously affect American sales in Scandinavia.

After varying fortunes throughout 1923 the close of the year found the textile industries of Denmark and Sweden working at considerably below normal, a condition ascribed chiefly to the cost of raw materials, principally cotton. The Norwegian industry is apparently able to maintain a fair competitive position because of low operating costs, due to cheap current from the country's numerous hydro-electric plants. German competition has always been less keen in Norway than in Denmark and Sweden, and this fact, coupled with a fair domestic demand, enables the Norwegian mills at present to operate at between 70 and 80 per cent of normal.

If the prices of raw materials drop in 1924, the competition from Swedish and Danish manufacturers in their respective countries can be expected to increase because textiles of domestic manufacture meet local requirements as to design and general adaptability — two factors which restrict American textile business in these markets. Dealers, however, express the opinion that 1924 will be more favorable than 1923 for the sale of American textiles in Scandinavia. Acting Commercial Attache H. Sorensen, Copenhagen, December 24.

#### Greek Production Almost at a Standstill.

Most of the Greek cotton mills have stopped operating, owing to the fluctuations of Greek exchange, and local production, therefore, is almost at a standstill. The imports of raw cotton have become correspondingly dull, but foreign purchases of cotton manufactures have been stimulated. Local dealers report that the 1924 outlook for the importation of gray sheetings; cotton suitings; print goods; black, blue and white drills; and other classes of low-grade cotton goods into Greece is bright, owing to the large special market created by the presence of more than 1,000,000 refugees who must be clothed and who necessarily demand cheap goods. Such imports come chiefly from England, Italy, France, Germany, Czechoslovakia, Japan and the United States.

About 3,000 bales of gray sheetings are imported annually. Japanese gray sheetings are assuming great prominence in this market today, although American unbleached sheetings are well known, and are admitted to be of more uniform quality. Price is the important factor in Japanese sales, and the goods offered closely imitate standard American brands in construction and appearance.

There is also a market for certain classes of wool and cotton yarns which the local mills cannot produce. The trade in wool cloth is essentially unimportant on account of the climate, and, under present

financial conditions, orders are rarely being placed.

#### Turkish Demand for Cotton Goods Changed.

The Anatolian market, which consumes the greater part of the staple textiles, must be reorganized before important and efficient business can be expected in Turkey. The emigration from Asia Minor of the minorities, who represented a strong consuming element, and who formerly conducted most of the wholesale and jobbing trade of the interior, has entailed the taking over of an important part of the Anatolian import trade by new people, many of whom are not acquainted with trade practices, and also lack the financial means of the former Armenian and Greek merchants. These new elements cannot obtain the same line of credit from Constantinople importers and wholesalers as was granted to their predecessors. The purchasing power of the country is much reduced, and, because of the evacuation of the non-Mohammedan population, the character of the trade in general has changed radically. Specialties used by the Christian population will not be in demand, and, on the whole, it is foreseen that future business with the interior will consist in greater proportion than formerly of cheap articles with effective appearance.

The demand on this market from the interior and the adjacent Black Sea countries, especially from Persia, is good, but prices of cotton goods, although between 10 and 15 percent cheaper than replacement values, are still so high as to render business very difficult. As it is impossible to raise even the prevailing prices on local stocks, importers are unable to place extensive new orders and are obliged to wait until spring for further developments.

Gray sheetings from the principal item of cotton goods imported into Turkey from the United States, but the present status of American trade in gray sheetings is extremely discouraging because of the severe and continued competition on the part of Japanese exporters who are offering sheetings which closely imitate standard American brands at prices substantially lower. Local stocks of American gray sheetings are estimated at about 200 bales (bales of 20 pieces of 40 yards). Practically no sales of American goods have been made for the last four or six weeks, but local sales of Japanese gray sheetings for the last four months are estimated at over 2,000 bales.

Italian gray sheetings of low quality, strongly sized, are underselling American goods by 25 per cent and Japanese sheetings by from 15 to 20 per cent. Local business circles have expressed the opinion that as long as the difference between American and Japanese goods continues, there would be no chance to resume extensive importations from the United States to Turkey.

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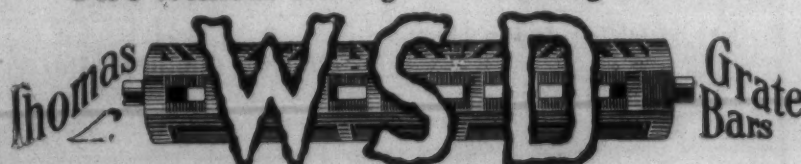
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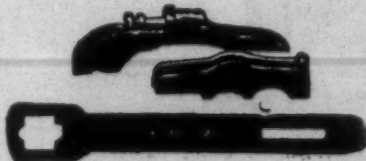
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### Visiting the Textile Machinery Shops.

(Continued from Page 12)

recording instruments and H. L. Scott & Co. have in every case been equal to the demand and have developed machines as needed.

They have also made many refinements and are always striving to make their machines more perfect.

H. L. Scott & Co. have a clean, well managed business, and after looking over their plant I could well understand the reputation of their machines.

When I was ready to leave, E. C. Scott very kindly drove me to the National Ring Traveler Company, at 257 West Exchange street.

#### National Ring Traveler Co.

I was glad to find the treasurer, Phil Wentworth, in the office. He is a man that believes in keeping in touch with his customers and is a frequent and welcome visitor to the South.

Mr. Wentworth was formerly with the Draper Company but came to the National Ring Traveler Company when Mr. Chase died in 1919.

Soon after taking charge he sent for his wire manufacturers and asked them if it was not possible to make wire to better meet the heat conditions of the travelers. They said that with study they could produce wire of the right composition to meet any given condition and Mr. Wentworth worked out with them a better wire.

He found that lint collected on a traveler and retarded its work, so after months of experimenting he produced a traveler with a small groove cut out of the top of the arch.

He states that this causes an air current that removes the lint but also accomplished another end.

Travelers are manufactured of iron and after manufactured are changed into high carbon steel by being heated, with bone and chemicals to 1,600 to 1,800 degrees. As they come from these ovens they are exceedingly hard and brittle and in tempering to give them elasticity, part of the hardening is taken out.

Mr. Wentworth says that the cutting of the groove reduced the material in the arch of the traveler and enabled the arch to be made elastic without so greatly reducing the hardness of the points. The traveler is known as the Wentworth double duty traveler and is now widely used.

I cite the above instances to show how Mr. Wentworth has been striving for better travelers since he took charge of the business.

"Travelers are usually very small," said Mr. Wentworth, "but my customers expect each box to contain travelers that are exactly the same size, same shape, same weight and same hardness, and care is required more than in any other business."

In order to make a traveler they start with round wire of a known composition. The wire is rolled until it becomes the right size and shape.

It is then fed automatically into a small machine and a piece the length of the traveler is cut off above a special shape pin. A plunger from above pushes the ends of the

piece downward and starts them around the pin while two fingers set at angles below push the ends around the pin and form the traveler.

As the plungers and fingers back off, the forming pin is withdrawn and the traveler drops into a pan. About 250 travelers are produced each minute. When round point travelers are being made small pieces of the wire are cut off with each traveler and have to be sifted from the travelers.

They have many machines of varying sizes and last year produced 750,000,000 travelers.

After the travelers are formed they are, as I have stated above, changed to high carbon steel and then tempered enough to give spring to the arch, for otherwise they would break when being put on the rings.

After tempering they have to be polished in revolving drums for about six days and then inspected.

The inspectors shake the travelers out one layer deep in pans and from long experience are able to pick out the defective ones.

I have been describing the manufacture of steel travelers but almost half of their business is in bronze travelers which do not have to be hardened or tempered.

In their store room they had more than 35 tons of iron wire and about an equal amount of copper wire.

In their stock room were 10,000 different sizes and styles of travelers.

I met R. C. Monroe, who has charge of the stock room, and was informed by Mr. Wentworth that it took a good man to fill the position.

I also met L. Everett Taylor, who assists Mr. Monroe, and found that he was a son of their Southern representative, D. C. Taylor, of Gaffney, S. C.

J. H. Avery, the superintendent, went through the plant with Mr. Wentworth and myself and took great interest in explaining the processes.

I also met Walter Walton, who is superintendent of the hardening and tempering department.

I left the plant of the National Ring Traveler Company with much more exalted idea of the manufacture of travelers than I had previously held.

It is a highly specialized business that requires much knowledge and care. Phil Wentworth sincerely believes that ring travelers are by far the most important of the textile devices and with that conviction is seeking to render service to the industry by making them as nearly perfect as possible.

Leaving Providence on the 5 p. m. train, I was back in Boston about 6:20.

### First City in the Value of Its Cotton Goods.

New Bedford is the first city in the United States in the value of cotton goods manufactured.

The net increase in scheduled capital invested in New Bedford cotton industries the past year has been \$10,516,700. The total capital now outstanding of all New Bedford cotton mills is \$72,251,900.

The credit of New Bedford's cot-



ton mill corporations is unsurpassed, during the seventy-six years they have been engaged in manufacturing cotton cloths and yarns they have paid 100 cents on every dollar of indebtedness. Their reputation for producing goods of the highest quality has been steadily maintained. From their latest statements it appears they are in a strong financial condition, having a surplus of quick assets of \$38,379,517.

The number of spindles decreased 22,344, the number now being 8,571,254.

The number of looms decreased 450, the number now installed being 54,017.

The number of employees increased 170, bringing the total up to 41,530.

New Bedford ranks first in the United States in the manufacture of fine cotton goods and fine cotton yarns, and first among the fine goods mills in the number of spindles.

Higher wages are paid operatives in New Bedford cotton mills, and they are kept better employed than in other cotton mill centers. Wages in the cotton mills were not reduced in 1923.

There were no new cotton mills erected in the city during 1923, but during the year there were alterations by several mills which called for a total expenditure of about \$40,000.—Boston Transcript.

twisting machines are made at Roubaix, Mulhouse and in the district of the Haute-Saone. Machinery for the woolen industry is mainly centered at Roubaix, this town doing an active export business in these machines. Weaving machinery is manufactured at Roubaix and Mulhouse. The Jacquard machines are made at Lyons. The district of Lyons also possesses an important industry for the making of silk-weaving machinery. The manufacture of silk-spinning machinery is a specialized trade in the Rhone and Cevennes districts. An industry which has particularly shown expansion during recent years is the making of looms for hosiery goods. The making of looms for the manufacture of net lace has also become an established industry in France, as well as dyeing, finishing and bleaching machinery. Machinery of this latter class is made in Alsace, and at Lyons and Roubaix.

Generally speaking the imports of textile machinery into France show a tendency to be on the decrease, while exports are expanding. For example, the exports of weaving machinery in 1922 were more than double those in 1913. It is recognized that this class of machinery manufactured in France is of excellent quality.—Monthly Review of the Banque Nationale Francaise du Commerce Extérieur, Paris.



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### Causes of the Cotton Crop Failure. (Continued from Page 8)

seeding, for securing good stands and for early cultivation, the crop will receive an early start, which is highly important under weevil conditions. With such a start, intensive cultivation and fertilization will insure the "setting" of enough fruit before weevil become destructively active to make a reasonable yield certain. Conversely, if there is another late spring and another late start in 1924, chances for reasonable production will be severely reduced and the outlook for production will be gloomy enough.

Here's hoping tha the law of averages will assert itself during 1924 and that some of the pessimism the trade naturally feels in viewing the future of cotton production will be dissipated.

### French Textile Machinery.

The textile machinery industry in France employs from 18,000 to 20,000 workmen. Flax-spinning machines are manufactured at Lille and Sedan; cotton-spinning and

### Production of Indian Cotton Mills Shows Decrease.

The output of the Indian cotton spinning and weaving mills during the 11 months, September, 1922, to July, 1923, amounted to 616,000,000 pounds of yarn and 357,000,000 pounds of woven goods, compared with 640,000,000 and 366,000,000 pounds, respectively, in the corresponding months of the preceding year, according to the monthly statistics of the Commercial Intelligence Department of India. In the four months, April to July, 1923, the production amounted to 208,390,000 pounds of yarn and 119,582,000 pounds (514,557,000 yards) of woven goods, and 12,217,000 pounds of yarn and 492,343,000 yards of piece goods were imported from foreign countries.

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**Cotton Yarn and Cloth Sizing.**

(Continued from Page 10)

any power to cause tendering. If used in excess, the goods become sticky. A suggestion has been made that polyglycerols would be of service, while the use of glycol has been patented for sizing dyed yarn. Castor oil is largely used in India and to some extent in England, but it must be used with caution or the size will be sticky. Turkey red oil is considered useful and gives great pliability to the yarn.

The presence of deliquescent substances confers flexibility on the starch, which is particularly useful in heavy sizing. Magnesium chloride is most commonly used, but calcium chloride is also occasionally employed. The moist starch film unfortunately favors the vigorous growth of moulds, which may be checked, however, by including zinc chloride in the size. Any of these chlorides in a cloth which has to be singed is certain to cause tendering. Magnesium chloride may crystallize out in a cloth stored under very dry conditions. Sizing compounds of unrevealed compositions are often found to contain chlorides. In addition to its use as a softening agent, glycerol is frequently considered as a deliquescent. At any rate, it can never dry.

China clay is used solely because of its weight. Magnesium sulphate is occasionally used in heavily-sized goods for producing a special feel, but it is said to crystallize in the yarn. Heavy sizing is sometimes applied to goods which are to be bleached and finished, with the object of ensuring that when the goods are finished at "loom weight" there shall be some starch present to replace the size which has been removed. The heavier the sizing the more is the amount of finishing material required, and, since the starch takes the finish, improved appearance results. Powdered clay and French chalk are sometimes added to size in order to facilitate separation of the ends.

Zinc chloride is commonly employed. The weight of antiseptic required per hundred of wheat flour in order to ensure safety is: Zinc chloride (8 to 10), sodium silicofluoride (3), boric acid (3), copper sulphate (.5), salicylic acid (.5), phenol (.5).

Pickard has noted that copper sulphate is extensively employed in Germany, but very little in England, but he thinks it may be objectionable in bleaching cloths. Stocks and White quotes some Alsatian mixtures in which 1.5 per cent of copper sulphate on the dry starch is used. In spite of its volatility in steam, boric acid is capable of replacing zinc chloride, and even salicylic acid is stated not to be lost in appreciable quantities during the boiling of the size, although there is no information as to its evaporation during drying. In America, turpentine, in amount about 1.5

per cent of the weight of starch, is included in size mixtures as an antiseptic, and has the additional advantage of preventing frothing.

The dry starch is added to cold water in a beck and the mixture agitated until all lumps are broken up. Steam is then admitted, fats and other ingredients are added when the mixture is hot, and boiling is continued till these are emulsified. If clay is a constituent of the mixture it is boiled separately, and the suspension is allowed to cool while under continual agitation. It is then run into the starch mixture and the whole well boiled together with uninterrupted agitation.

The flour is mixed with water or with an aqueous solution of zinc chloride and agitated for periods up to several weeks, according to the opinion of the individual user. If water only is used, an alcoholic type of fermentation sets in, which, for a few days, results in considerable frothing. When the first vigorous effervescence has ceased the mixture is pumped to a second beck and then passes by gradual stages through a series of such becks, the full process occupying several months.

The question of the surface tension of size pastes, as well as viscosity, has recently been shown to be a controlling factor in the coating of wire with waxes. "Lumpiness" of size is ascribed by Seydel to the use of soap, and by Pickard to excess of fatty acid in the fallow used.

The size is pumped from the storage becks to a pipe feeding direct into the sow-box, to which admission is given by a valve directly controlled by the rise or fall of a floating roller. When this valve is closed, the pressure in the pipe is relieved by the lifting of a loaded valve in a branch circuit leading back to the size box. An important recent modification of practice is the Nivling system of circulation in which size is delivered in excess of the quantity being taken up by the yarn. The excess is returned to the back, being drawn off by suitable arrangements from the bottom of the sow box, which is thus kept clear of lumps. Another proposal is for the provision of a small auxiliary size box, from which the fresh pastes is driven through a long pipe into and across the main box by a small steam jet acting as an injector. The excess from the ordinary box returns to the extension, and a constant circulation is maintained considerably in excess of the amount of fresh paste delivered from the beck. A device for local circulation is a hollow copper roller which draws size in at its ends and expels it through peripheral perforations.

The temperature control of the size is said to result in greatly improved weaving. The size pipes are lagged, and the size is maintained at a constant level, while the standard of cleanliness is high. Hinckley discusses the best temperature for sizing, and comes to the conclusion that breakages in the loom steadily decrease as the sizing temperature is reduced from 212 degrees F. to 180 degrees F., while McNider states that below 180 degrees F. dusting increases, although 180 degrees F. is better sizing temperature than 190 degrees F.

The question of the best temper-a

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ture to employ must still be regarded as an open one, but there seems to be little doubt that constancy of temperature in the size box is important. It is probable that this factor is bound up with that of the maintenance of uniform viscosity, but no data have been found as to the variation of size viscosity with temperature. In the case of fine yarns and for sizing narrow widths of colored borders, a closed steam coil is recommended for heating purposes.

Hinckley counts the number of ends which are broken during the weaving of equal lengths of cloth in adjacent looms in order to determine the weaving properties of warps sized in different ways. He classifies breakages as due to knots, coarse threads, bunches and unknown causes. His data prove that fewer breakages occur when the temperature of the size is controlled between 171 degrees F. and 190 degrees F., than when uncontrolled or open boiling at 242 degrees F. is practiced. Of great interest is the fact that breakages attributed to knots are responsible for the whole of the significant differences between the samples. Other workers have measured the breaking strength of the sized yarn, making the doubtful assumption that this represents weaving value.

#### Dyeing of Artificial Silk in the Skein

(Copyright, 1924, by National Aniline & Chemical Co., Inc.)

Artificial silk has constantly advanced during the past decade from the status of being a novelty fibre to that of assured prominence in the textile field. At one time it was thought to occupy a position only secondary to natural silk and to be used as a substitute for the latter. After the properties of artificial silk became better known among textile manufacturers, and improvements were introduced in its manufacture, new uses were found for it, and instead of being used as a substitute for real silk, it parallels it in many lines, from lamp shades to dress fabrics of nearly all kinds.

Naturally, with the development and extended use of artificial silk, improvements were also made along other lines, notably in dyeing. At one time, during the early days of artificial silk production, it was extremely difficult for dyers to turn out successive batches that were level in shade, or even matched. Today dyers seldom have any difficulty in handling it, due to a more intimate knowledge both of this fibre itself, as well as the dyes best adapted to color it.

The three most important artificial silks are known as Chardonnet, or nitro silk, the first of industrial importance; Viscose silk, representing the variety of greatest consumption in the trade; and Acetyl Cellulose, known also as Lustron. Owing to the properties of each of these varieties which differ materially, the dyer should use judgment in selecting dyes best suited.

Chardonnet silk is colored most satisfactorily with dyes of the basic group, the process being simply one of immersing the unmordanted skeins in a bath heated to about 65 degrees to 70 degrees F., to which from 3 to 5 per cent of Acetic Acid

is added. After working for about half an hour, the temperature is raised slowly to 120 degrees F., keeping the skeins in slow but steady motion, until the bath is exhausted. Afterwards rinse and finish.

Viscose silk, when dyed with the basic dyes, must first be mordanted in a bath heated to 140 degrees F., and prepared with 2 to 6 per cent Tannic Acid. The skeins are immersed for 3 to 4 hours, carefully squeezed, and immersed in a fresh, cold bath containing from 1 to 3 per cent of Tartar Emetic (or equivalent of antimony salt) for half an hour, and finally rinsed well. The skeins are then ready for dyeing.

Dyeing is performed in a bath containing the requisite amount of basic dye, and 3 to 14 per cent of Acetic Acid. Commerce cold, and turn the skeins slowly until the bath is nearly exhausted; then raise the temperature gradually to 115 degrees or 120 degrees F., turning until all the color is taken up.

Viscose silk may be dyed with direct dyes, in which case the skeins are well wetted-out with from 1 to 3 per cent Turkey Red Oil, and dyed at from 100 degrees to 120 degrees F., for about three-quarters of an hour. For heavy shades, such as used on fringes or other ornamental textiles, dyeing may begin at 100 degrees F., being gradually raised to 180 degrees or 190 degrees F.

Acetyl Cellulose is dyed with basic dyes at 100 degrees F., and with an addition to the dye bath of from 2 to 4 per cent Acetic Acid. After half an hour at 100 degrees F., the temperature is raised to about 150 degrees F., and dyeing continued until the bath is exhausted.—Reprinted by permission from "Dye-stuffs."

#### Indian Piece Goods Imports Decline Sharply.

The Bombay raw cotton market is unsettled, with a tendency for prices to decline in the face of a fairly steady demand. Indian raw cotton for April and May delivery dropped from 661 rupees per 784 pounds on December 26 to 618 rupees on January 26. (The exchange value of the rupee was \$0.3410 on December 27 and \$0.3031 on January 25.)

Bombay receipts of raw cotton from September 1, 1923, to January 17, 1924, amounted to 1,167,000 bales, and stocks on hand on the latter date were estimated at 543,000 bales. December exports of raw cotton were 48,305 tons, compared with 32,396 tons in November.

The Bombay cotton goods market is steady, with a good retail inquiry, and Bombay mill stocks were appreciably reduced during December. Calcutta also reports a fair demand.

December imports of cotton cloth totalled 88,613,000 yards—a decline of approximately 32 per cent from the November figures (129,591,000 yards). Gray (unbleached) goods imports showed the largest decrease, dropping from 70,832,000 yards in November to 49,857,000 yards in December. Other Indian foreign purchases in December amounted to 20,756,000 yards of white (bleached) and 18,000,000 yards of colored piece goods, compared with 32,212,000 and 26,547,000 yards, respectively, in November.



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## Cotton Goods

New York. — Some improvement was noted in the cotton goods markets during the past week. In spite of the fact that there was a slight easing in prices, the general tone of the market was better. Buying was confined to small orders, but the number of them was larger than during the previous week and covered a wider range of fabrics.

The demand for finished goods showed some gain. There was some increase in sales of gingham and percales and fancy wash goods were more active. Napped goods for fall sold moderately. Chambrays for shirtings and printed shirtings were quiet.

The trade in bleached cottons, sheetings and pillow cases was mostly for filling in purposes. Print cloths and sheetings were firmer as the result of a better demand. Export trade for the week was light. Buyers holding off for lower prices.

Print cloths and sheetings moved steadily in small order lots during the latter part of the week. Curtailment of gray goods production increased during the week, especially in Eastern centers. There were reports of 64x60, 5.35 in second hands at 9½ cents Saturday, but no business reported. First hands quoted 10 cents. For 68x72, 4.75 yard, 11½ was quoted in second hands, spots, with 11½ in first hands. For 72x76, 4.25 yard, 13 was quoted; 14½ cents for 80 squares, 4.00 yard, March. Spots of the 80 squares, at this figure, were difficult to secure. The asking price for 44-inch, 48 squares, 6.40 yard, continued at 9 cents. For 60x48, 6.25 yard, 8½ in second hands reported; first hands quote 9 cents, and 9½ asked in Fall River. For 39-inch, 56x44, 6.60 yard, 8½ cents considered the market; 8½ paid to first hands for 48 squares, 7.15 yard South; 7½ for 44x40, 8.20 South, and 7½ East. Fall River quoted 8½ for the 7-15s. Some 36-inch, 40 squares, 9.20 yard, East, quoted at 6½ cents. There have been reports of some low prices in second hands on narrow print cloths, mention of one-eighth reported for 25-inch, 10.55.

Sheetings sold moderately. It was reported that jobbers bought some 5.50s at 9 cents and sales of 40-inch 2.85s were made at 15½ cents. It is possible to again buy 31-inch 5 yards at 9½ cents. Some agents are still holding firm, while others will accept prices for spots.

Business in tire fabrics was not very active last week. Reports indicate that most tire producers have fabrics on hand to take care of their production through May. Prices were practically unchanged, and mills report that present quotations are below cost in most instances.

For drills, some 30-inch, 3.00 yard, sold recently at 15½ net. On the other hand, reports of some goods at 15, net, are heard. First hands have sold a few 30-inch, 3.25, at 14, net—and one-quarter less has been heard in second hands. Some quote 16½, net, for 30-inch, 2.85 yard—and slightly less has also been heard. For 37-inch, 3.95 yard, 11½, net, is reported. Some centers are looking for propositions on certain styles of both 30 and 37-inch drills. For 37-inch, 3.50 yard, 14½, net, is being quoted.

Inquiry for cotton duck was fairly good during the week, with quotations holding firm without appreciable change. A few mills were reported as quoting slightly lower prices, but the list was generally unchanged. Orders were slightly larger before the week ended and some mills who had been quoting under the market got enough business to change their price ideas.

The Fall River print cloth market showed little activity for the week. There was a moderate demand for 36-inch low count constructions and aside from this business, other sales were principally in 4.37, 64x104 sateens.

Wholesale dry goods business is reported by John V. Farwell Company was slightly more active. They said:

"Wholesale dry goods business is reflecting retailers' increased interest in spring lines, with greater activity in goods for at once shipment. Road orders are running about even with corresponding week of last year in volume. The record of number of orders received in comparison with volume shows expansion in size of commitments. Retail buyers have been in the market in increased numbers during the week.

Cotton prices were reported as follows:

Print cloths, 28-inch, 64x64s, 7½ cents; 64x60s, 7½ cents; 38½-inch 64x64s, 10½ cents; brown sheetings, Southern standard, 17 cents; denims, 2.20s, 26 to 26½ cents; tickings, 8-ounce, 30 cents; prints, 10½ cents; staple gingham, 13½ cents; dress gingham, 21½ to 24 cents.

B W C

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# The Yarn Market

Philadelphia, Pa.—There was little change in the yarn situation during the week. Prices remained nominally the same, except for an easing tendency that was noted under the lower cotton market before the week ended. Buyers continued to hold off the market and were not interested in large buying, even at the prices at which some lots of distressed yarns were offered.

There was a fairly good inquiry for knitting yarns, but resultant sales were confined to small lots. Prices generally on Southern corded hosiery and underwear yarns have shown no price change for the past two weeks. Some dealers reported a better demand last week for single carded cones, buying has mainly been of the hand-to-mouth variety. Some of the knitting mills are reported to have fairly good supplies of carded yarns at prices lower than they can be purchased at present.

Some of the dealers who have been selling stock yarns at prices considerably under spinners' prices are now able to go any lower as they have not been able to buy additional supplies cheap enough to continue competition at low prices. The average difference between spinners and what yarn buyers offer is around three cents and spinners are less inclined to compromise on price than yarn users.

Combed numbers remain quite dull. Mercerizers, who take the bulk of combed sale yarns coming into this market, are not buying and have not been. Experienced sellers say that it does not look to them as if the mercerizers will purchase additional yarn for, possibly, a month or two. A few thousand pounds of a varied assortment of counts comprise the average daily sales of combed yarns at present.

Yarn quotations were published in this market as follows:

Two-Ply Chain Warps.		
2-ply 8s	46	a
10s	47	a
12s to 14s	48	a49
2-ply 16s	50	a
2-ply 20s	51	a51½
2-ply 24s	54½	a55
2-ply 26s	55	a56
2-ply 30s	56½	a57
2-ply 40s	66	a68
2-ply 50s	76	a
Two-Ply Skeins.		
8s	44½	a45½
10s to 12s	46	a47
14s	48½	a49
16s	49½	a50
20s	50	a51
24s	54	a54½
26s	54½	a55
30s	56	a57
36s	63½	a
40s	65½	a
40s ex.	72	a73
50s	75	a76
60s	81	a
Tinged Carpet—		
3 and 4-ply	42	a43
White Carpet—		
3 and 4-ply	44½	a45
Single Chain Warps.		
10s	46½	a
12s	47½	a
14s	48½	a
16s	49½	a50

20s	50½	a
24s	53½	a54
26s	54½	a55
30s	57	a58
40s	69	a

Single Skeins.		
6s to 8s	45½	a
10s	46½	a
12s	47½	a
14s	48	a
16s	48½	a49½
20s	50½	a
24s	54	a
26s	54½	a
30s	57	a

Frame Cones.		
8s	46	a
10s	46	a
12s	47	a
14s	47½	a
16s	48	a
18s	50	a
20s	51	a
22s	51	a
24s	53½	a
26s	54	a
28s	55	a
30s dbl. card.	60	a
30s tying in	56½	a57
40s	66	a68

Combed Peeler Skeins, Etc.		
2-ply 10s	65	a
2-ply 20s	68	a70
2-ply 30s	73	a75
2-ply 36s	78	a80
2-ply 40s	80	a82
2-ply 50s	90	a93
2-ply 60s	85	a100
2-ply 70s	105	a110
2-ply 80s	120	a125

Combed Peeler Cones.		
10s	57	a58
12s	58	a59
14s	59	a60
16s	60	a61
18s	61	a62
20s	62	a62½
22s	63	a63½
24s	63½	a64
26s	64½	a65
28s	65	a66
30s	66	a68
32s	71	a73
34s	73	a75
36s	78	a80
38s	79	a81
40s	80	a82
50s	85	a90
60s	95	a100
70s	110	a115
80s	125	a130

Carded Peeler Thread Twist Skeins.		
20s, 2-ply	61	a
22s, 2-ply	62	a
24s, 2-ply	63	a
30s, 2-ply	66	a
36s, 2-ply	70	a
40s, 2-ply	75	a
45s, 2-ply	79	a
50s, 2-ply	88	a
Carded Cones.		
10s	52	a
12s	53	a
14s	54	a
20s	55	a56
22s	56	a58
26s	60	a61
28s	62	a63
30s	63	a65

## Gray Cloth Imported Into Shanghai.

Imports of gray shirtings and sheetings into Shanghai for the period January 1 to November 29, 1923, amounted to 859,598 pieces of European, 825,632 pieces of Japanese, and 12,920 pieces of American gray cloth. Sales of both European and American goods show decreases from the figures for the corresponding period of 1922, when 1,172,051 pieces of European, 341,520 pieces of American, and 670,466 pieces of Japanese shirtings and sheetings were imported. Stocks of these gray goods on November 29 were estimated at 203,757 pieces of European and 162,479 pieces of Japanese sheetings and shirtings.—Assistant Trade Commissioner G. C. Howard, Shanghai, China, December 1.

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Wanted — Position as second hand in spinning room. First-class references. Address F. S. K., care Southern Textile Bulletin.

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equipment of nearly 2,500 Spindles consisting of all machinery, belting, shafting, pulleys, motors, etc. All needed is a building, machinery erected, leveled and lined, and start to making yarn. The price of this equipment is less than \$7.00 per Spindle for the entire machinery equipment.

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### In Market for Looper Clips.

We use large quantities of soft, white looper clips in manufacture of our floor mops and will contract for your entire year's output.

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Experienced superintendent with several years on both plain and fancy work. Good manager, excellent references. Can positively get results. Address Results, care Southern Textile Bulletin.

### UNUSUAL OPPORTUNITY

Large and prominent manufacturer of warp dressings, sulphonated oils, softeners, etc., desirous of engaging the services of a successful salesman who has had similar experience. Territory—Georgia and Alabama. Your first letter must give in detail qualifications, age, references, etc. Address Box B, care Southern Textile Bulletin.

Wanted—By firm, already well established in South, a salesman familiar with bleaching and finishing. X. Y. Z., care Bulletin.

Wanted—First-class machinist for renecking steel rolls. State experience and wages expected. Permanent position. Box 298, Greenville, S. C.

Wanted — Man to straighten spinning spindles. State experience and wages expected. Permanent position. Box 298, Greenville, S. C.

Young woman with varied and successful experience in industrial programs would like, by April 15, welfare position giving promise of growth and expansion with progressive plant. Excellent references. L. A., care Southern Textile Bulletin.

We want reliable and capable representative in each town in North and South Carolina to sell life insurance, working part or all time. New policy. Good contract. Address Box 67, Shelby, N. C.

### Mill For Sale.

A good 3,000-spindle mill, with space for 10,000 spindles, and good hydro-electric power. M. B. Pitts, Elberton, Ga.

### Wanted

A position as overseer of spinning or would accept second hand of a large mill. Have had 45 years' experience in spinning department, including overhauling and erecting of spinning frames. A. D. H., care Southern Textile Bulletin.

ESTABLISHED 1815

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Improves Weaving"

NORFOLK - - VIRGINIA



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The fee for joining our employment bureau for three months is \$2.00, which will also cover the cost of carrying a small advertisement for one month.

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During the three months' membership we send the applicant notices of all vacancies in the position which he desires.

We do not guarantee to place every man who joins our employment bureau, but we do give them the best service of any employment bureau connected with the Southern textile industry.

**WANT position as overseer weaving.** Long experience on wide variety of goods. Can get good production, with small percentage of seconds. Best of references to show character and ability. No. 4127.

**WANT position as overseer weave room,** large or small. Now employed as overseer and giving satisfaction but wish larger place. Experienced on wide variety of goods, white and colored. Good references. No. 4128.

**WANT position as overseer carding or spinning,** or assistant superintendent. Am experienced man with long record of successful service. Best of references. Can come on short notice. No. 4129.

**WANT position as overseer carding.** Competent man who thoroughly understands carding and preparatory processes. Character and habits good, steady work and a hustler for production. No. 4130.

**WANT position as overseer weaving,** beaming or slashing. Have had 12 years' experience in above departments. At present overseer with 1,000 looms on checks and chambrays and am giving satisfaction. Age 40, married, good references. No. 4131.

**WANT position as roller coverer.** Experienced, reliable and first-class man in every respect. Best of reference. No. 4147.

**WANT position as superintendent or will** accept place as overseer carding or spinning. Experienced in some of the largest and best mills in the South and can get results. References. No. 4132.

**WANT position as overseer carding.** Am reliable man of sober habits, good manager of help and thoroughly understand carding. Good references. No. 4133.

**WANT position as superintendent of** weave mill, or would accept place as overseer weaving in large mill. Can get production at right price and understand quality weaving methods. Best of references. No. 4134.

**WANT position as superintendent or will** take place as overseer, carding spinning or weaving, prefer weaving. Now employed in good North Carolina mill, but wish to change for better place. Best of references. No. 4135.

**WANT position as overseer carding in** good sized room. Prefer Georgia or Alabama. Eighteen years as overseer in good mills. Now overseer in large mill but have good reasons for wishing to change. Age 48, have family, have good textile education and can run the job. No. 4136.

**OVERSEER carding,** now employed, wishes to make change. My experience and training fit me to handle large job in good mill. Good manager of help, first-class references as to character and ability. No. 4137.

**WANT position as superintendent yarn** mill of 10,000 to 15,000 spindles. Age 46, married, long practical experience, 12 years as superintendent. Now employed but have good reasons for making change. References. No. 4138.

**WANT position as slasher tender or second** hand in spinning. Well qualified for either place. Best of references. No. 4139.

**WANT position as roller coverer.** Am expert in roller covering and can demonstrate my ability in short time. Now employed in good mill. Want to correspond with mill needing man of unusual ability. No. 4140.

**WANT position as overseer of carding.** Long experience in handling a combination of both rooms and can get excellent results. Good references. No. 4148.

**WANT position as electrician with good** mill or some other manufacturing plant. Have had 15 years' experience. Can furnish excellent references. No. 4149.

**WANT position as superintendent,** or would accept place as carder or spinner. Practical man of long experience as both superintendent and overseer. Best of references. No. 4150.

**WANT position as overseer carding or** spinning, or master mechanic and electrician. Employed at present but have good reasons for making a change. Can come on ten days' notice. First-class references. No. 4151.

**WANT position as overseer carding and** spinning. Am 44 years old and have had 20 years' experience as overseer and assistant superintendent. Can furnish best of references. No. 4152.

**WANT position as overseer plain weaving** or overseer cloth room. Have had more than 25 years' experience on practically all kinds of goods. Am qualified to handle either position. Age 46, have family. Best of references. No. 4153.

**WANT position as overseer spinning.** Have had long experience in the spinning room and have taken a course with the I. C. S. Good references. No. 4154.

**WANT position as overseer of slasher** department. Age 32, eight years' experience as slasher and beamer. Good references. No. 4154.

**WANT position as overseer weaving.** Long experience on wide variety of fabrics and am capable man in every respect. Good references from past and present employers. No. 4156.

**WANT position as superintendent of tire** yarn or fabric plant, or fine combed yarn mill. Now located in East, but have had 6 years' experience in South. Long term of services superintendent and overseer and am reliable man who can get excellent results. Excellent references. No. 4157.

**WANT position as overseer cloth room.** Long experience on lawns and sheetings and can guarantee satisfaction. Good references. No. 4158.

**WANT position as overseer of small card** room or second hand in large room. Am also excellent card grinder. Long experience in good mill. A-1 references. No. 4159.

**WANT position as superintendent.** Have had 18 years as such and am now employed in my 19th year. Can handle yarn or cloth mill and am high class, practical man. No. 4160.

**WANT position as overseer carding or** spinning, or both. Past experience and training fits me to handle job in efficient manner. Good references. No. 4161.

**WANT position as overseer spinning,** or overseer weaving. Long experience in good mills in both departments. Reliable, steady man of good habits. Excellent references. No. 4162.

**WANT position as master mechanic.** Now employed. Experienced in both steam and electric plants and can handle work in satisfactory manner. Good references. No. 4163.

**WANT position as overseer spinning.** Experienced for many years on both carded and fine combed yarns. Would like to correspond with mill needing high-class man. Excellent references. No. 4164.

**WANT position as overseer weaving.** Experienced on many different fabrics and am competent and reliable. No. 4165.

**WANT position as superintendent.** Fitted by training and experience to handle large mill in satisfactory manner. Good references. No. 4166.

**WANT position as superintendent; yarn** mill preferred. Now superintendent of good yarn mill and have held job for over two years. Giving entire satisfaction. Thoroughly understand carding and spinning. 15 years as superintendent and overseer. Good references. No. 4167.

**WANT position as superintendent of** cloth mill. Long experience and can give references from many mill executives to show excellent record of past service. No. 4168.

**WANT position as superintendent of** yarn or cloth mill. Now employed as night superintendent but wish day job. References to show ability, character and past record. No. 4169.

**WANT position as superintendent or** will take overseer's place in any department. Thoroughly qualified to handle any room in the mill. Best of references. No. 4170.

**WANT position as superintendent or** carder and spinner. Will go anywhere. Prefer yarn mill of 5,000 to 30,000 spindles. Can come at once. Best of references. No. 4176.

**WANT position as carder or spinner.** Ten years' experience in carding, spinning and winding. Now employed, but will change on short notice. Age 37, with family. References from present and past employers. No. 4172.

**WANT position as superintendent.** Practical man, good pusher, can get quality production on all classes of yarns. Good references. No. 4173.

**WANT position as overseer spinning.** Practical man of long experience on practically all yarn counts made in South. Good references. No. 4174.

**WANT position as overseer spinning.** Have had 20 years' experience in spinning, spooling and warping in some of the best mills in South, and West, both white and colored work. Age 36, married, sober, now employed as overseer. Good references. No. 4175.

**WANT position as superintendent or** would take overseer of carding and spinning. Many years' experience as superintendent and overseer and am well qualified in every respect. Best of references. No. 4171.

**SUPERINTENDENT or carder and spinner** desires position. Would take place as night superintendent in large mill. Prefer mill on plain work. Satisfactory references. No. 4177.

**WANT position as superintendent of mill** or plain weaving or hosiery yarn. Am now 32 years of age and can give good references. Now employed as superintendent. No. 4178.

**WANT position as superintendent or assistant** superintendent in medium size mill. Would consider weave room in large mill. Best of references. No. 4179.

**WANT position as spinner.** Age 48. Have had 20 years' experience and can give excellent references. No. 4180.

**WANT position as superintendent of finishing** in yarn plant. Long experience in large Eastern mill and have excellent record of service. Fine references. No. 4181.

**WANT position as carder or spinner,** or box comb. Am specialist in combed yarn work and have had a long term of satisfactory service. Excellent references. No. 4182.

**WANT position as shipping clerk.** Four years' experience and can handle big job. Now employed as shipping clerk. Gilt-edged references. No. 4183.

**WANT position as carder and spinner.** Now employed as such, but wish a larger place. Experienced, practical and reliable man. No. 4184.

**WANT position as overseer finishing** department, white or colored goods. Have had 16 years' experience in cloth room, 12 years as overseer on white and colored goods, wet and dry finish. Best of references. No. 4185.

**WANT position as overseer spinning.** Have had 12 years' experience as overseer and can furnish best of references. No. 4186.

**WANT position as overseer weaving.** Can handle either plain or fancy work, both colored and white. Now employed. First-class references. No. 4187.

**WANT position as superintendent, carder,** spinner or carder and spinner. Have acceptably filled overseer's position for long term of years. Best of references. No. 4188.

**WANT position as master mechanic and** engineer. Experienced and skilled mechanic of long experience. Best of references. No. 4189.

**WANT position as overseer spinning.** 12 years as overseer and 5 years as overhauler in spinning and twisting. Good references. Address No. 4190.

**WANT position as superintendent, or** overseer weaving or designer. Have specialized in fancy weaving and designing and can show samples that have proved business getting. Long record of satisfactory service in fine weaving plants. Good references. No. 4192.

**WANT position as superintendent of** small yarn mill or carder and spinner in larger mill. Have had 20 years as overseer. Good references. No. 4191.

**WANT position as superintendent or** carder and spinner. Now employed but want better job. First-class references. No. 4193.

**WANT position as superintendent.** Prefer weaving mill. Practical man of long experience on great variety of fabrics. Good references. No. 4194.

**WANT position as overseer carding any-** where in South. Long experience and also graduate of I. C. S. Good references. No. 4197.

**WANT position as overseer spinning,** twisting or winding at not less than \$40 weekly. Have had 25 years in the mill, 10 years as overseer, have run present room 3 years. Good references. No. 4195.

**WANT position as overseer weaving.** My experience has been as overseer in a number of large weave rooms and many kinds of goods. Excellent references. No. 4196.

**WANT position as overseer of small** weave room on plain goods. Am hustler for quality production and good manager of help. Good references. No. 4198.

**WANT position as carder or spinner or** superintendent. Now employed. Many years as both superintendent and overseer and am competent worker. Good references. No. 4199.

**WANT position as carder.** Have had 7 years as overseer and can give first-class references. No. 4200.

**WANT position as superintendent of** yarn or weave mill, or overseer weaving. Long experience in carding, spinning and weaving and winding and can give good references. No. 4201.

**WANT position as superintendent of** yarn mill. Prefer plant on tire fabrics. Experienced man of good habits and character and can give good references. No. 4202.

**WANT position as overseer weaving on** any kind of plain work; 12 years as overseer and have always been able to get the goods. Now employed but have good reasons for changing. Good references. No. 4203.

**WANT position as spinner.** Have held present job for over 6 years and made good record. Can get quality production at right price. Good references. No. 4203.

**WANT position as carder or carder and** spinner. Am hustler for production and quality and know how to keep costs down. No. 4204.

**WANT position as superintendent of** yarn mill. Have had 12 years' experience. Have finished course in grading and stapling cotton. Know mill business thoroughly. Best of references as to character and ability. No. 4206.

**WANT position as carder in small mill** or second hand in large mill. At present employed by good mill but desire to change. Good references as to character and ability. No. 4207.

**WANT position as carder.** Thoroughly understand the carding process and have long term of experience in good mill. Best of references. No. 4208.

**WANT position as superintendent.** Experienced and reliable man who can get results. Experience gained in some of the best mills in the Carolinas. Excellent references. No. 4209.

**WANT position as superintendent.** Am competent executive and good manager of help, experienced in all departments of mill and man of good character and habits. Best of references. No. 4210.

**WANT position as superintendent of medium** sized yarn mill or assistant superintendent in large mill. Prefer mill in Georgia, Alabama or Mississippi. Long experience as overseer spinning. Have held present place as assistant superintendent for many years, making 4s to 40s single and ply cones, tubes, skeins and warps. References. No. 4111.

**WANT position as superintendent or** overseer carding and spinning. Am 41 years old, have had 20 years' experience as overseer and superintendent of mills in Georgia. Can give good references as to character and ability and can come at once. Good manager of help. No. 4113.

**MASTER mechanic and chief engineer** of extraordinary ability will consider proposition by March first. Fine machinist and mechanical engineer. Correspondence strictly confidential. No. 4114.



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Jackson, Hill & Co., Little Rock, Ark.  
Jackson, B. D., Charlotte, N. C.  
Johnson, Oliver & Co., Providence, R. I.  
Jordan Mfg. Co., Monticello, Ga.  
**K**  
Kale, J. Edward & Co., Lincolnton, N. C.  
Kaumagraph Co., New York City.  
Keever Starch Co., Greenville, S. C.  
Klauder-Weldon Dyeing Machine Co., Bethayres, Pa.  
Klipstein, A. & Co., New York City.  
**L**  
Lampe, Thomas Co., Fort Worth, Texas.  
Lesser-Goldman Cotton Co., Charlotte, N. C.  
Lestershire Spool & Mfg. Co., Johnson City, N. Y.  
Leverett & Moore, Hillsboro, Texas.  
Link-Belt Co., Chicago, Ill.  
Lockwood, Greene & Co., Boston, Mass.  
Lowell Shuttle Co., Lowell, Mass.  
Lupton's Sons Co., David, Philadelphia, Pa.  
**M**  
Macrodi Fibre Co., Woonsocket, R. I.  
Magruder, L. W. & Co., Memphis, Tenn.  
Marston, John P. Co., Boston, Mass.  
Mathieson Alkali Co., New York City.  
Mauney Steel Co., Philadelphia, Pa.  
Marrow Machine Co., Hartford, Conn.  
Metallic Drawing Roll Co., Indian Orchard, Mass.  
Metz, H. A. & Co., New York City.  
Mill Devices Co., Durham, N. C.  
Minter Homes Co., Greenville, S. C.  
Moreland Sizing Co., Spartanburg, S. C.  
Morse Chain Co., Ithaca, N. Y.  
Mossberg Pressed Steel Corp., Attleboro, Mass.  
**Mc**  
McCaughy, Edward J., Pawtucket, R. I.  
McCauley, J. N. & Co., Charlotte, N. C.  
McClave-Brooks Co., Scranton, Pa.  
**N**  
National Aniline & Chemical Co., New York City.  
National Ring Traveler Co., Providence, R. I.  
Newburger Cotton Co., Memphis, Tenn.  
N. Y. & N. J. Lubricant Co., New York City.  
Nichols Mfg. Co., Asheville, N. C.  
Norwood Engineering Co., Florence, Mass.  
**O**  
Okla. Cotton Growers' Assn., Oklahoma City, Okla.  
Oliver, B. F. & Co., Clarksdale, Miss.  
**P**  
Page Fence & Wire Products Assn., Chicago, Ill.  
Paige, Schoolfield & Co., New York City.  
Palmetto Loom Harness & Reed Works, Greenville, S. C.  
Parker, Walter L. Co., Lowell, Mass.  
Parker, B. H. & Co., Gastonia, N. C.  
Parks-Cramer Co., Fitchburg, Mass.  
Paulson, Linkroom & Co., New York City.  
Pawtucket Spinning Ring Co., Central Falls, R. I.  
Penick & Ford, Cedar Rapids, Iowa.  
Perkins, B. F. & Son, Holyoke, Mass.  
Poland Soap Works, Anniston, Ala.  
**R**  
Rash, Brin & Co., Terrell, Texas.  
R. I. Warp Stop Equipment Co., Pawtucket, R. I.  
**Rice**  
Rice Dobby Chain Co., Millbury, Mass.  
Ridley, Watts & Co., New York City.  
Robinson, John L. & Co., Memphis, Tenn.  
**Ross**  
Roessler & Hasslacher Chemical Co., New York City.  
Rogers Fibre Co., Boston, Mass.  
Rogers, J. F. & Co., Clarksdale, Miss.  
Root Co., Bristol, Conn.  
Rose, Geo. M., Jr., Charlotte, N. C.  
Roy, B. S. & Son, Worcester, Mass.  
**S**  
Saco-Lowell Shops, Charlotte, N. C.  
Sanders, Orr & Co., Charlotte, N. C.  
Sayles Finishing Plants, Inc., Saylesville, R. I.  
Seaboard Ry., Charlotte, N. C.  
Sellers, William & Co., Philadelphia, Pa.  
Shamrow Shuttle Co., Woonsocket, R. I.  
Sirrino, J. E. & Co., Greenville, S. C.  
S. K. F. Industries, New York City.  
Sonnenborn, L. Sons, New York City.  
Sonoco Products, Hartsville, S. C.  
Southern Distributing Co., Charleston, S. C.  
Southern Ry., Charlotte, N. C.  
Southern Spindle & Flyer Co., Charlotte, N. C.  
Southern Textile Machinery Co., Greenville, S. C.  
Southern Wood Preserving Co., Atlanta, Ga.  
Spinks, John D., Winston-Salem, N. C.  
Stafford Co., Readville, Mass.  
Steel Heddle Mfg. Co., Philadelphia, Pa.  
Stein, Hall & Co., New York City.  
Stewart Bros. Cotton Co., Charlotte, N. C.  
Sugar Creek Coal Sales Co., Mount Hope, Va.  
Sweeny, R. P., Greenville, S. C.  
Sydnor Pump & Well Co., Richmond, Va.  
**T**  
Tanner & Jones, Charlotte, N. C.  
Terrell Machine Co., Charlotte, N. C.  
Textile Mill Supply Co., Charlotte, N. C.  
Thomas Grate Bar Co., Birmingham, Ala.  
Tipton & Co., Brownsville, Tenn.  
Tolhurst Machine Works, Troy, N. Y.  
Tripod Paint Co., Atlanta, Ga.  
**U**  
United Chemical Products Co., Jersey City, N. J.  
U. S. Bobbin & Shuttle Co., Providence, R. I.  
U. S. Ring Traveler Co., Providence, R. I.  
Universal Winding Co., Boston, Mass.  
**V**  
Vermont Spool & Bobbin Co., Burlington, Vt.  
Victor Ring Traveler Co., Providence, R. I.  
Vogel, Joseph A. Co., Wilmington, Del.  
**W**  
Wadsworth, Howland & Co., Boston, Mass.  
Watson, L. S. Mfg. Co., Leicester, Mass.  
Watson, White Co., Jackson, Tenn.  
Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.  
Whitin Machine Works, Whitinsville, Mass.  
Whitinsville Spinning Ring Co., Whitinsville, Mass.  
Williams, J. H. Co., Millsbury, Mass.  
Williams, Chauncey A., Manchester, N. H.  
Williams, I. B. & Son, Dover, N. H.  
Wilson, William & York, Charlotte, N. C.  
Wilts Veneer Co., Richmond, Va.  
Wolf, Jacques & Co., Passaic, N. J.  
Woods, T. B. Sons Co., Chambersburg, Pa.

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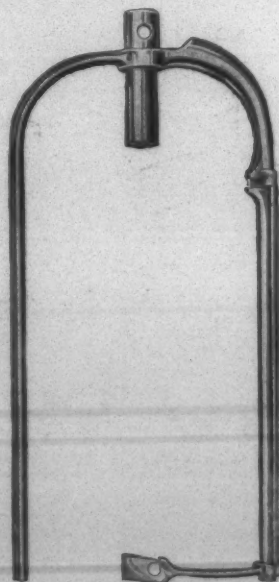
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